A STUDY TO ASSESS THE EFFECTIVENESS OF CIRCULAR HIP MASSAGE ON FIRST STAGE LABOUR PAIN AMONG PRIMIGRAVIDA MOTHERS AT MBMM HOSPITAL, KERALA.

BY

30083621

A DISSERTATION SUBMITTED TO THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN NURSING

MARCH – 2010

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"Shout for joy to the LORD, all the earth. Worship the LORD with gladness...
Know that the LORD is God. It is He, who made us, and... we are His people.
Enter His gates with thanksgiving and courts with praise; give thanks
to Him and praise His Name. For the LORD is good and His love
endures forever; His faithfulness continues
through all generations."
(Psalms 100)

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Above all 'I lift my eyes to the heavens and offer my deepest sense of everlasting gratitude and love to the LORD, from where the help came'.

"I will lift up my eyes to the mountains: From where shall my help come?

My help comes from the LORD, Who made the heavens and the earth."

(Psalms. 121:1, 2)

Thank you LORD – my God, for everything…!!

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INTRODUCTION

"A woman giving birth to a child has pain because her time has come;
but when her baby is born she forgets the anguish because of her joy
that a child is born into the world."

(John 16:21)

BACKGROUND OF THE STUDY

"To touch is humane; but the feelings are Divine".

Pain in labour is nearly universal experience for child bearing women. Pain and its relief for women in labour have been a subject of interest since the dawn of mankind. Child birth has been associated with pain and throughout history measures had been introduced to help relieve it. Pain can vary during different times in the same labour and during different birth by the same woman. Massage has the potential benefits such as decreasing the intensity of pain, relieving the muscle spasm, increasing physical activity, promoting general relaxation and reducing anxiety.

In midwifery, pain would be defined as 'a complex, personal, subjective, multifactorial phenomenon which is influenced by psychological, biological, socio-cultural, and economical factors'. (Fraser and Cooper, 2005).

A variety of factors affect the intensity and amount of pain experienced by women in labour. These include: perception of pain, tolerance of pain, coping mechanisms, individual meaning of pain, expression of pain, communication of pain, cultural characteristics and environment of pain.

The biological, psychological, social, spiritual, cultural and educational dimensions of each woman have an impact on how they express themselves and indeed how they perceive pain during labour. The challenge of midwifery is to provide adequate and adapted care for each childbearing woman. The essence of midwifery is to be 'with woman', providing comfort in labour. Historically, the maintenance of health has been the role of women. (Kitzinger 2000).

Much midwifery and medical research has indicated that the one-to-one support by a midwife in labour reduces the need of analgesia and improves the birth experience of the mother. It also shortens the length of the labour.

Pain control during labour is a woman centered concept. There is much evidence to state that women are not always more satisfied by a birth experience, that is pain free. (Fairlie, et al 1999)

The pain itself and its severity, plus the side-effects of medication, make it difficult for the woman to maintain control during labour. Women then require care, support, attention and advice at this time. Midwives are therefore required to give control of the pain to women rather than eradicating it and a clear differentiation must be made between the traditional goal of pain relief and the control of pain in labour.

There are many types of non-pharmacological methods of pain control; among those, homeopathy, hydrotherapy, music therapy, TENS, acupressure technique, application of heat & cold, and massage are the most common and widely applying techniques. Among these methods, massage has the potential benefits such as decreasing the intensity of pain, relieving muscle spasm, increasing physical activity, distracting from pain, promoting general relaxation and decreasing anxiety.

Massage is an ancient practice that has been widely employed during labour. It comprises of deep stroking and superficial stroking. It is thought to work either by blocking pain impulses to the brain by increased A β fibre transmission or by stimulating the local release of endorphins due to more relaxation of soft tissue.

The labour pain is increasing in labour as it proceeds. There are various modalities to help to relieve pain during labour, in which massage gives better effectiveness. Massage stimulates the body to release endorphins which are natural pain killing and mood lifting hormones. This hormone has the potential benefits such as decreasing the intensity of pain, relieving the muscle spasm promoting general relaxation and reducing anxiety.

Circular hip massage is one of the massage techniques for labour, which is used during the first stage. This massage is good for women experiencing back pain during their labour. Circular hip massage is a specifically designed technique in which upward and downward circular strokes are given on either sides of spine in the sacral region with controlled breathing, which helps to relieve the labour pain.

Comparing to all the non-pharmacological methods of pain relief during labour, circular hip massage has many important benefits such as, it will not give any harmful effects to the mother as well as to the fetus and it can reduce need for pharmacological agents for pain relief.

NEED FOR THE STUDY

Child birth is a natural biological process and therefore the pain associated with it is also perceived as normal and natural. The nature of the pain experienced during labour depends on the physical and emotional status of the women.

Labour pain is an excruciating intolerable pain, which results in changes in blood pressure, pulse, respiration, skin colour, pallor and diaphoresis. The mother with labour pain may have bouts of nausea and vomiting and she may have certain affective expressions which include increasing anxiety, writhing, crying, groaning, gesturing (hand clenching and wringing) and excessive muscular excitability throughout the body.

Severe labour pain may also cause several problems to the fetus such as abnormal heart rate patterns, lack of oxygen, position changes and may cause a cesarean delivery. If the fetus is already stressed greater amounts of the medication are "trapped" in the fetal circulation, it may lead to more pronounced newborn effects.

Tzeng Y. L. and Su T.J. (2008) studied on low back pain during labour among 93 low risk women, in which 75.3% of the participants suffered episodes of low back pain during labour. Pain as well as the location of the pain intensified as labour progressed. The type of low back pain in 54.29% of women in labour was muscle soreness and pain, where 45.71% women was continues.

Ohel I., et al (2007) observed on changes in pain threshold before, during and after labor in among 40 pregnant women. There was a significant decline in pain threshold after labor as compared to pain threshold during labor (2.507 ± 0.947 and 2.608 ± 1.023, respectively, $p = 0.01$). Pain intensity using the VRS score was higher during labor than before labor (4.8 ± 2.7 and 2.4 ± 2.6 respectively, $p < 0.001$). So the study found that, there was a significant rise in pain threshold during labor in term pregnancies than before and after labour.

Wijma, et al (2001), did a comparative study on the labour pain among 35 primipara and 39 multipara women during first stage of labour and it is found that the primigravida mothers experience more intense pain during labour as compared to multigravida mothers ($t = 0.735$, $p = 0.01$).

Cambell and Kurtz (2000) conducted a descriptive study to evaluate the intensity of labour pain at the two stages of cervical dilatation, (cervical dilatation of 2 – 5 cm and 6 – 10 cm). The study identified that when the cervical dilatation increased, there was a significant increase in self-reported pain and observed pain on all the cited measures ($t = 15.72$, $p = 0.01$).

Nowadays many number of non-pharmacological (complementary and alternative medicine) therapies like massage, therapeutic touch, hydrotherapy, music, heat application and cold application are being used to reduce pain or distress. Non-pharmacological therapies are gaining popularity and finding a more substantial place in health care. (Williams J. and Mitchell M. 2007; Ernst and White, 2000)

In 1995 The Alternative Health Information Bureau with The Nursing Times, investigated the largest survey of nurses in respect to alternative and complementary therapy ever undertaken. A total of 393 nurses responded to the survey. The therapies were used to help to treat a variety of conditions from arthritis to cancer, but the most common conditions were stress, relaxation, anxiety, pain relief, insomnia, pregnancy and palliative care. 88.5% of nurses, who has used complementary therapies, stated that they had seen a definite improvement in the patient's condition as a result of the therapy. 88% stated that they recommend complementary / non-pharmacological therapies to patients (often - 30%, occasionally - 58%). It indicates that non-pharmacological therapies (especially massage, aromatherapy and therapeutic touch) are being used widely by health care professionals.

Some studies show that from 10 to 50% of adults in industrialized nations use some form of alternative therapies (1998). The percentage of the population who used alternative therapies during the prior 12 months has been estimated to be 10% in Denmark (1987), 33% in Finland (1982) and 49% in Australia (1993). Public opinion polls and consumers' association surveys suggest high prevalence rates throughout Europe and the United Kingdom. The percentage of the Canadian population who saw an alternative therapy practitioner during the previous 12 months has been estimated at 15% (1995).

Today, there is a wide range of interventions available to help the laboring woman to manage pain during labor, since the pain in labor is a very common and serious issue.

Non–pharmacological techniques have been inadequately studied and there appears to be little interest from funders to finance research on these seemingly simple, safe and innocuous measures. More research attention is required to these promising techniques. However, in the absence of clear scientific confirmation of their effectiveness, acceptability must be based on other criteria: absence of harm and preferences of each individual woman. This can be facilitated with comfort measures that provide sufficient pain relief and enhance the woman's sense of control and her satisfaction with her birth experience.

Malathi M. (2006) observed the effectiveness of simple massage, franch oil massage and normal labour care on labour pain of 60 primi para mothers. The study identified that there was a significant reduction in labour pain score in the group which received the franch oil massage than the simple massage group and control group; $F = 117.04$ ($p < 0.05$), $F = 150.9$ ($p < 0.05$), and $F = 39.8$ ($p < 0.05$) respectively.

Latha K. (2005) reported the effectiveness of ice massage over the acupressure meridian point in labour pain perception of 90 parturient mothers who are in the active phase of labour. The study found that, there was a significant decrease in the level of pain perceived by the parturient mothers following the ice massage over the acupressure meridian point ($t = 90.93$; $p < 0.01$).

Phumdoung S. and Good M. (2003) have done a study on music which reduces sensation and distress of labour pain. The study identified that there was a significant relief on severe pain across 3 hours of labour and delayed the increase of affective pain for 1 hour.

Burns E.E., et al (2001) conducted a study to examine the contribution of aromatherapy to the promotion of maternal comfort during labour and as a tool to improve the quality of midwifery care. A total of 8058 mothers were evaluated and the study indicated that the use of aromatherapy during child birth was an increasingly popular care option with mothers and midwives. More than 50% of mothers rated it as helpful; only 14% found it unhelpful and 60% of samples were primi gravidae. The study showed that aroma therapy may have the potential to augment labour contraction in dysfunctional labour.

Many studies were done on the effectiveness of compensatory alternative medicine therapies. Among those, massage on labour pain was the cost effective procedure and this procedure provides more psychological and physiological effect on labour.

Davim R.M.B., et al (2007) stated that the lumbo-sacral massage had a great effectiveness in parturient pain relief during the active stage of labour.

Kimber L. (2006) observed the effects of various massage techniques (circular hip massage, whole back massage, shoulder massage, sacral pressure massage, lower circular back massage, and leg massage) for child birth among 50 parturient mothers with $\geq$ 36 week

gestation. 33% did not require any analgesia and 48.1% used just Entonox. There was 100% spontaneous vaginal delivery in the multiparous women whereas 81.4% in nulliparous.

The investigator proposed to determine the effectiveness of circular hip massage and normal labour care on labour pain among the primigravida mothers. The study would help the midwife to assess the nature of labour pain and manage it appropriately. It would also indicate the effectiveness of circular hip massage in the reduction of the labour pain.

MBMM Hospital, Kerala has a separate antenatal, natal, and post natal units. Labour room has 5 beds capacity which is attached with first stage room (7 beds capacity), where the mother in labour will be admitted. There were 5 – 7 normal deliveries apart from caesarian section, done everyday. 2 to 4 primigravida and 3 to 5 multigravida normal deliveries are conducted but no mother is treated with any non-pharmacological therapy to reduce the pain or discomfort. Severe labour pain causes many adverse effects like inappropriate cervical dilatation, fetal distress, varying degree of caput, meconium stained liquor amini, etc. on the mother as well as on the fetus; especially on primigravida mothers. So the investigator felt the need for administering circular hip massage for the mothers to reduce the labour pain.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala.

OBJECTIVES

1. To assess the significant difference between the pre and post test mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage.
2. To compare the significant mean difference in labour pain score among primi gravida mothers in the experimental and control group.
3. To determine the association between the mean difference in labour pain score and selected variables among primi gravida mothers in the experimental group.

HYPOTHESIS

H_1 : There will be a significant difference in the mean labour pain score among primigravida mothers in the experimental group before and after circular hip massage.

H_2 : There will be a significant difference in the mean difference in labour pain score among primi gravida mothers between the experimental and control group.

H_3 : There will be a significant association between mean difference in labor pain score and selected variables among primigravida mothers in the experimental group.

OPERATIONAL DEFINITIONS

1. *First Stage of Labour:* In the study, first stage of labour refers to the initial stage of labour, which begins from 4 to 6cm. dilatation and ends with 7 to 9cm. dilatation of the cervix.
2. *Labour Pain:* Labour pain is referred as painful uterine contractions at regular intervals with increasing intensity and duration during first stage of labour. It is measured by visual analogue pain scale during relaxation time.
3. *Primigravida Mothers:* Primigravida mothers are those who were pregnant for the first time. The study referred to the mothers who were admitted in MBMM Hospital for the purpose of delivery, who fulfilled the sample selection criteria.
4. *Circular Hip Massage:* A type of massage technique in which upward and downward circular strokes are giving on either sides of spine in the sacral region with controlled breathing, which was thought to minimize the labour pain. The massage is done for 15 minutes with the interval of 30 minutes for 4 times as specified in the Circular hip massage guide (Appendix – XI).
5. *Effectiveness:* Effectiveness means result, outcome or change produced by an action. In the study effectiveness refers to the reduction in the labour pain with regard to circular hip massage on primigravida mothers in first stage of labour. It was measured by the mean difference.
6. *Selected Variables:* Refers to those issues, elements, variables which were thought to influence the labour pain such as age, weight gained in antenatal period, physical strain in the job, presence of family members in labour, knowledge regarding labour pain, previous hospitalization and pain tolerance.

ASSUMPTIONS

1. Circular hip massage promotes relaxation, thereby increasing the compliance of primigravida mothers during labour.
2. Pain perception by primi mothers in labour is their first experience and not influenced by previous experience.
3. The response of the mothers to the visual analogue pain scale would be the true measure of the pain.

DELIMITATIONS

1. The study will be delimited to the subjects who were hospitalized for labour in MBMM Hospital, Kerala.
2. The pain will be measured by visual analogue pain scale.
3. The samples were selected by purposive sampling method.

CONCEPTUAL FRAME WORK

POLIT and HUNGLER (2004) state that a conceptual framework is interrelated concept on abstractions that are assembled together in some rational scheme by virtue of their relevance to a common scheme. It is a device that helps to stimulate research and the extension of knowledge by providing both direction and impetus. The present study was aimed at determining the effectiveness of circular hip massage and normal labour care on labour pain among the primigravida mothers. The conceptual framework of this study was derived from Gate control theory of pain.

Gate Control Theory of Pain: The Gate Control Theory first postulated by Melzack and Wall in 1965. This theory suggests that, for pain to pass through the gate there must be an unopposed passage for nociceptive information, arriving at the synapses in the substantia gelatinosa. The pain impulses will be carried out by the small diameter, slow conducting A δ and C fibres. Impulses traveled through small diameter fibres will open the pain gate and the person feels pain. Pain gate is also receiving impulses produced by stimulation of thermo receptors or mechanoreceptors transmitted by large diameter, myelinated A β fibres inhibit and superimpose the small diameter impulses. Many non-pharmacological procedures such as application of heat or cold, massage, vibration, TENS and movement stimulates the nerve ending connected with large diameter fibres which can produce a reduction on pain by closing the pain gate.

If nociceptive information is allowed through the gate, then this traffic will continue up the lateral spino-thalamic tract of the spinal cord to the thalamus and from there to the cerebral cortex. As this stimulus passes through the brainstem it may cause an interaction between the periaqueductal area of grey matter (PAG) and the raphe nucleus in the midbrain. These nuclei form part of the descending pain suppression system and there descending neurons can release an endogenous opiate substance into the substantia gelatinosa at the spinal cord level.

The chemical nature of this endogenous opiate, which may be β endorphin or enkephalin, is such as to cause inhibition of transmission in the nociceptive circuit synapses. This is achieved by blocking the release of the chemical transmitter in the pain circuit. Thus if a cutaneous stimulus of a noxious type is applied such as massage, application of eyes, TENS, UV counter irritation, transverse friction etc., then the release of enkephalin or β endorphin could reduce pain at the spinal level.

Based on the principle of gate control theory, the following conceptual frame work was developed. Methods used to reduce the labour pain is influenced by selected variables such as age, weight gained in antenatal period, physical strain in job, presence of family members in labour, knowledge regarding labour pain, previous hospitalization and pain tolerance.

Primigravida Mothers : They possess the characteristics of their selected variables such as age, weight gained in antenatal period, physical strain in job, presence of family members in labour, knowledge regarding labour pain, previous hospitalization and pain tolerance. They had normal labour care such as enema, positioning, nutrition and psychological support etc.

Labour Pain : Labour pain is caused by uterine contraction, which leads to cervical dilatation, effacement and uterine ischemia due to contraction of the arteries of the myometrium. In this study it referred as painful uterine contractions at regular intervals with increasing intensity and duration during first stage of labour. It is measured by visual analogue numerical pain rating scale during relaxation time.

Stimulation of Pain Receptors : Contraction of the uterus stimulates pain receptors in sacral region. In the control group more stimulation of pain receptors in the sacral region is occurred due to the close contact between the contracting uterus and sacral region. In case of experimental group, less stimulation of free nerve endings happens in the sacral region as compared to the control group, due to the relaxation caused by circular hip massage in the sacral region. Here circular hip massage is not interfering in the uterine contraction but it causes relaxation in the muscle groups.

Traveling of Pain Impulses : Normally pain impulses are traveling through small short conducting A δ and C fibres. Impulses from stimulation such as massage, cold application and TENS etc., will be quickly conducted by large myelinated A β fibres. In control

group pain impulses will be conducted straight away by A δ and C fibres, which reach the gate of pain and open the gate. In experimental group, where the mothers receive circular hip massage, impulses will be conducted by fast conducting A β large fibres which reaches the gate of pain very quickly.

Gating Mechanism : Pain impulses during the first stage of labour are transmitted through the spinal nerve segment of T_{11-12} and accessory lower thoracic and upper lumbar sympathetic nerves, which are traveled through small diameter, slow conducting amyelinated A δ and C fibres. The impulses traveled through small diameter fibres will open the pain gate. Thus mother perceives pain in the lower back. Impulses from massage traveled through fast conducting myelinated A β fibres which superimpose small fibres, closes the pain gate and also β endorphin which is released from inter neurons at spinal cord level which also closes the gate of pain. Thus mother perceives less pain in lower lumbar and sacral region.

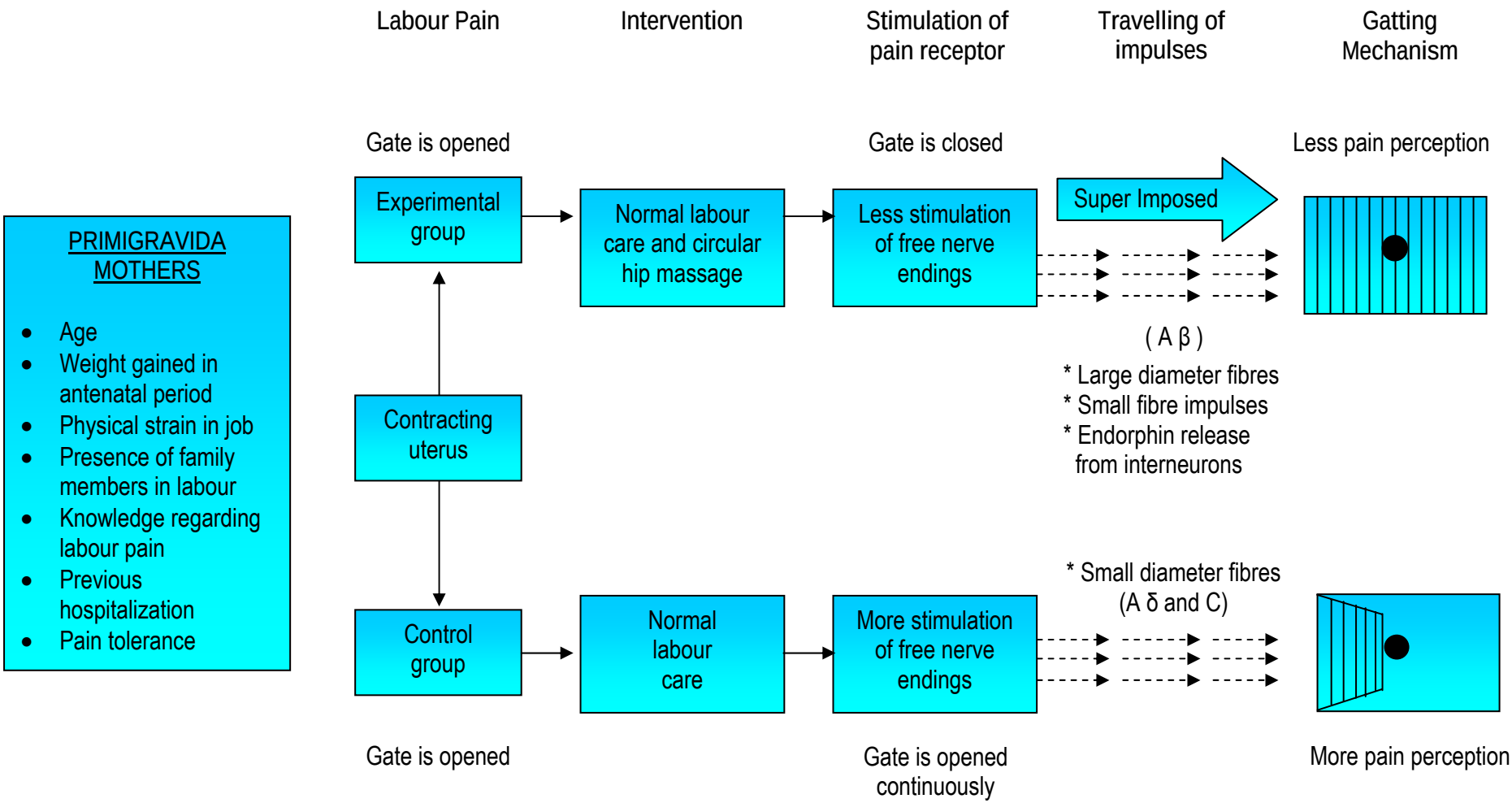


Fig. 1: Conceptual Frame Work (Gate Control Theory of Pain)

CHAPTER – II

REVIEW OF LITERATURE

Review of literature is an essential component of a worth while study in any field of knowledge. It helps the investigator to gain information on what has been done previously and to gain deeper insight into the research problem. It also helps to plan and conduct the study in a systemic and scientific manner.

Review of literature of the present study was arranged in the following headings:

I. Studies related to labour pain perception.
II. Studies related to massage on pain in general.
III. Studies related to labour pain and massage.
IV. Studies related to labour pain and circular hip massage.

I. STUDIES RELATED TO LABOUR PAIN PERCEPTION

Olayemi, et al (2009) measured the effect of ethnicity on the perception of pain by parturients in labor at the University College Hospital, Ibadan. The main outcome measure was pain perception assessed by the Box Numerical Scale (BNS). The Yoruba ethnic group had scores lower than the mean scores for the other ethnic groups (t = −0.636 [95% confidence interval (CI) −0.959, −0.313]). The presence of a doula reduced the mean BNS scores significantly (t = −0.533 [95% CI −0.844, −0.222]). Increasing parity also reduced pain scores (t = −0.182 [95% CI −0.342, −0.022]). Increasing educational attainment increased pain scores in labour (t = 0.189 [95% CI 0.017, 0.361]). It is confirmed that, the ethnicity of the parturient relative to that of the predominant ethnicity in the place of birth has a significant effect on the perception of labor pain by the parturient.

Pirdel M., et al (2009), reported a descriptive – comparative study on perceived environmental stressors and pain perception during labour among 300 primiparous and 300 multiparous women who were candidates for vaginal delivery in Tabriz Alzahra Hospital, Iran. The data were collected by a questionnaire and the intensity of pain was determined by Visual Analogue Scale (VAS). Significant positive correlations were found between pain and tension from environmental factors in primiparous ($r = 0.16$, $p < 0.01$) and in multiparous ($r = 0.22$, $p < 0.05$) women. Furthermore, primiparous women believed that a crowded delivery room (70%) and restriction of movement and mobility (67%) contributed to their environmental stresses. Multiparas women believed that noise in the delivery ward (84%) and restrict of fluid intake (78%) increased their stresses. Therefore, performance of routine diagnostic tests in hospitalized pregnant woman, provision of invasive medical care during labor process and a noisy and crowded environment influence the mother's labour experience and perception of pain.

Tzeng Y. L. and Su T.J. (2008) conducted a correlational design study on low back pain among 93 low risk women in labour were recruited from a Medical Centre in Central Taiwan. The low back pain was repeatedly measured during latent phase (cervix dilated 2-4cm), early active phase (cervix dilated 5-7cm) and late active phase (cervix dilated 8-10cm) of labour. Data were analyzed by using descriptive statistics, repeated measurement ANOVA and Logistic regression. The results showed as many as 75.3% of the participants suffered episodes of low back pain during labour. The mean pain scores were 36.66 – 76.20 in the various stages of labour. Pain intensified as labour progressed. The location of the pain also been changed with the progression of labour. The type of low back pain in 54.29% of women in labour was "muscle soreness and pain". The pattern of pain in 45.71% women was continues. The women in labour who suffered from low back pain during pregnancy (OR = 3.23; $p < 0.01$) and had a greater body weight when hospitalized (OR = 1.13; $p = 0.02$), where most likely to be in the low back pain group.

Ohel I., et al (2007) observed on changes in pain threshold before, during and after labour in a prospective clinical trial among 40 pregnant women at term, in Ben Gurion University of the Negev, Israel. Pain threshold in 18 specific pressure points was evaluated using a dolorimeter. Subjective pain intensity was assessed by the parturient using the Verbal Rating Scale (VRS). Pain threshold was significantly higher during active phase of labour. There was a significant decline in pain threshold after labour as compared to pain threshold during labour (2.507 ± 0.947 and 2.608 ± 1.023, respectively, p = 0.01). Pain intensity using the VRS score was higher during labour than before labour (4.8 ± 2.7 and 2.4 ± 2.6 respectively, p < 0.001). There was a significant rise in pain threshold during labour in term pregnancies. This rise may have an intended protective effect during the intense labour pain experience.

Aya A.G, et al (2004), observed circadian variations in labour pain perception, among 222 consecutive nulliparous women with uncomplicated pregnancy, spontaneous labour, cervical dilatation (3-5 cm), The ruptured membranes and normal fetal heart rate tracings were studied, in University Hospital, Nîmes, France. Visual analogue pain scores (VAPS) were analysed and divided into four periods: night (1:01 a.m. to 7:00 a.m.), morning (7:01 a.m. to 1:00 p.m.), afternoon (1:01 p.m. to 7:00 p.m.) and evening (7:01 p.m. to 1:00 a.m.). VAPS were also compared between daytime (morning+afternoon) and nocturnal (evening+night) periods. The results of the study shows that daytime mean VAPS were lower than nocturnal scores [75.6 (15.1) vs 85.7 (14.1), p <0.0001]. VAPS were lower in the morning than in the afternoon, evening and night periods (ANOVA, p <0.0001). Labour pain perception appears to be chronobiological and this might be taken into account when enrolling parturients in studies designed to assess or treat labour pain.

Wijma, et al (2001) did a comparative study on the labour pain among 74 primi para and multipara women during first stage of labour in Linkoping University, Sweden. 35 primi parous and 39 multiparous women were selected for the study by using random selection method. Verbal rating scale (VRS) was used to collect the data. The data was analyzed by mean, SD and t-test. The result of the study shows that primi para women reported higher level of pain than multiparous women ($t = 0.735$, $p = 0.01$).

Cambell and Kurtz (2000) conducted a descriptive study to evaluate the intensity of the labour pain at the two stages of cervical dilatation, (cervical dilatation of 2 – 5 cm and 6 – 10 cm) at East Cardina University, School of Nursing, Greeille. 78 women in labour were selected through convenient sampling technique using 3 self reported measures such as VAS, present pain intensity scale and Mc Gill pain questionnaire carried out the pain assessment. These were the one observational measure to rate behavioral index of pain. The data was analyzed by descriptive and inferential statistics. The result of the study shows that when the cervical dilatation increased, there was a significant increase in self-report pain and observed pain on all the cited measures ($t = 15.72$, $p = 0.01$). Pain was characterized as discomforting during early dilatation, distressing, horrible and excruciating as dilatation progressed.

II. STUDIES RELATED TO MASSAGE ON PAIN IN GENERAL

Kutner J.S., et al (2008) reported a randomized trial study on efficacy on massage for decreasing pain and symptom distress among 82 adults with advanced cancer in palliative care centre and Catholic Hospice, Florida. The tools used were Brief Pain Inventory (BPI) and Memorial Symptom Assessment Scale. Among 82 patients, 32 patients were in the massage group, whereas 45 in the control group. Both groups demonstrated immediate improvement in pain (massage: -1.87 point and control: -0.97) and mood (massage: 1.58 point and control: 0.97 point). Massage was superior for both immediate pain and mood (mean difference: 0.90 and 0.61 points respectively; $p < 0.001$). Massage may have immediately beneficial effect on pain and mood among patients with advanced cancer.

Morales M.A., et al (2008) reported a prospective randomized clinical trial study on the effect of massage on neuromuscular recruitment, mood state and mechanical nociceptive threshold (MNT) after high – intensity exercise among 62 healthy active students (age: 18 - 26) at a university based sports medicine clinic. Dependent variables were surface electromyography (sEMG) of quadriceps, profile of mood states (POMS) and mechanical nociceptive threshold (MNT) of trapezius and masseter muscles. These data were assessed at baseline after exercise and recovery periods. Significant differences were found in effects of treatment on sEMG of Vastus Medialis (VM) ($p = 0.02$) and vigor subscale ($p = 0.04$). After the recovery period, there was a significant decrease in electromyographic (EMG) activity of VM ($p = 0.02$) in the myofascial-release group versus a non-significant increase in the placebo group ($p = 0.32$), and a decrease in vigor ($p < 0.01$) in the massage group versus no change in the placebo group ($p = 0.86$). Massage reduces EMG amplitude and vigor when applied as a passive recovery technique after a high-intensity exercise protocol. Massage may induce a transient loss of muscle strength or a change in the muscle fiber tension–length relationship, influenced by alterations of muscle function and a psychological state of relaxation.

Kumar J.S., et al (2006) conducted a randomized, double blind, cross – over trial study is to determine the effects of massage therapy prior to heel stick on pain responses assessed by the Neo-natal Infant Pain Scale (NIPS) (primary outcome), heart rate, respiratory rate and Oxygen saturation (secondary outcome) among 23 infants (from 1 to 7 days post birth) who required a heel stick for blood sampling. In 23 infants (birth weight: 795 – 2507gm.), there were no adverse physiologic effects of massage. After heel stick, NIPS ($p < 0.001$) and heart rate ($p = 0.03$) were increased in the no-massage group compared with the massage group. Respiratory rate, oxygen saturation and serum cortisone were not significantly different. Therefore, gentle massage of the leg prior to heel stick is safe and decrease pain responses in pre-term infants.

Mok, et al (2004) conducted an experimental study on the effect of slow stroke back massage (SSBM) on shoulder pain in hospitalized elderly patients with stroke. 102 patients were selected randomly for the study. 10 min. slow stroke back massage (SSBM) was given for seven consecutive evenings. The data was collected by psychophysiological parameters in three days questionnaire. Inferential statistics was used to analyze the data. The result of the study shows that SSBM was an effective nursing intervention for reducing shoulder pain among elderly patients with stroke ($p = 0.01$) .

Quinn C., et al (2002) measured the effect of massage therapy on chronic non-migraine headache among 10 adults who have chronic tension headache. The intensity of headache assessed by Visual Analogue Scale (VAS) compared with baseline values, headache frequency was significantly reduced within the first week of the massage protocol. The reduction of headache frequency continued for the reminder of the study ($p = 0.009$). The duration of headache tended to decrease during the massage treatment period ($p = 0.058$). Headache intensity was unaffected by massage ($p = 0.19$). The muscle – specific massage therapy used in this study was potential, to be a functional, non-pharmacological intervention for reducing the incidence of chronic tension headache.

Alnigenis M.N.Y., et al (2001) conducted a pilot study on the effects of Swedish massage (SM) in fibromyalgia syndrome (FMS) among 37 patients in Indiana University of Medical School, Indianapolis. Swedish massage (SM) was compared with standard physician care (SC) without or with interim follow-up telephone calls (SCPC). Baseline Arthritis Impact Measurement Scales [AIMS] of physical activity, depression, anxiety and pain for all patients indicated poor status. Baseline Quality of Well Being (QWB) scores showed impaired quality of life; the Rheumatology Attitudes Index (RAI) scores indicated helplessness. All but five subjects had a Center for Epidemiologic Studies Depression score above 15. At four weeks (7-SM/8-SC/9-SCPC), the SM group improved in RAI ($p = 0.06$) and AIMS mobility ($p = 0.05$). At 28 weeks (4-SM/6-SC/6-SCPC), there were no significant inter-group differences. The 16

study completers had significantly lower baseline QWB scores (p = 0.025) than dropouts. Although the study showed some effect of SM in FMS at four weeks, benefits were modest and not significant at later time-points, perhaps attributable to low subject retention. The subject warrants further exploration.

Preyde M. (2000) studied a randomized controlled trial study on the effectiveness of massage therapy for sub-acute low back pain among 107 patients with sub-acute low back pain in Health and Performance Centre, Ontario. Among them 98 patients completed post treatment tests and 91 completed follow up tests. They were randomly assigned to 1 of 4 groups, comprehensive massage therapy (n = 25), soft - tissue manipulation only (n = 25), remedial exercise with posture education only (n = 22), or a placebo of sham laser therapy (n = 26). Each subject received 6 treatments within approximately one month. Roland Disability Questionnaire, the Mc Gill Pain Questionnaire (PPI and PRI), the State Anxiety Index and the Modified Schober Test (lumbar range of motion) were the tools used. The comprehensive massage therapy group had improved function (mean RDQ score 1.54 v. 2.86 – 6.5, $p < 0.001$), less intense pain (mean PPI score 0.42 v. 1.18 – 1.75, $p < 0.001$), and a decrease in the quality of the pain (mean PRI score 2.29 v. 4.55 – 7.71, P = 0.006) compared with the other three groups. At one month follow up, 63% of the subjects in the comprehensive massage therapy group reported no pain as compared with 27% of the soft – tissue manipulation group, 14% of the remedial exercise group and 0% of the sham laser therapy group.

III. STUDIES RELATED TO LABOUR PAIN AND MASSAGE

Davim R.M.B., et al (2007) reported a descriptive study on non-pharmacological strategies (NFS) such as respiratory exercises, muscular relaxation, lumbo-sacral massage, shower washing, deambulation and pelvic swing on pain relief during labour. In order to evaluate the NFS, the analogue visual scale (AVS) was used on 30 parturient mothers attended at the humanized labour unit of a school – maternity Hospital in North-East of Brazil. Of the 6 NFS, 2 were excluded post-test (deambulation and pelvic swing) for not being accepted by the parturient mothers. The remaining NFS (respiratory exercises, muscular relaxation, lumbo-sacral massage and shower bathing) obtained acceptance percentage above 80 being therefore selected for the application of Mann Whitney's U test, with a statistical significance of ($p < 0.05$) for the verification of the effectiveness in parturient pain relief during the active stage of labour.

Padmavathi R. (2007) measured the effectiveness of back massage on pain relief during first stage of labour among 60 expectant mothers during first stage of labor in selected hospitals of Raichur by a quasi experimental design with the nonequivalent control group. The tool used were Structured interview schedule, Visual analogue scale, Zung self rating anxiety scale and Fatigue severity scale. Using descriptive and inferential statistics, the pre-test mean score of pain in experimental group was almost same ($x= 4.53$, $SD = 0.82$) as the control group ($x= 4.63$, $SD= 0.81$) and obtained "t" value was 0.45; where as in the post-test mean pain scores in experimental group ($x= 5.69$, $SD= 1.3$) was lower as compared to control group ($x= 8.75$, $SD = 2.6$) and calculated "t" value 4.25 indicated significant difference between the pain level of experimental and control group. The continuous back massage hourly from the beginning till to the end of the first stage of labour had significantly reduced pain, anxiety and fatigue levels in the experimental group where as in control group, the pain, anxiety and fatigue had increased at the end of the first stage of labour.

Malathi M. (2006) observed the effectiveness of simple massage, franch oil massage and normal labour care on labour pain of 60 primi para mothers selected by convenient sampling method in Government Hospital, Erode. The study was a non-equivalent factorial repeated measure design, with interview schedule for background variables and visual analogue numerical pain scale for the pain score as tool. There were three groups: simple massage group (n= 20), Franch Oil massage group (n = 20) and control group (n = 20). There was a significant reductions in labour pain score in the group who received the franch oil massage than the simple massage group and control group; $F = 117.04$ ($p < 0.05$), $F = 150.9$ ($p < 0.05$) and $F = 39.8$ ($p < 0.05$) respectively.

Jayabharathi B., (2006) measured the effectiveness of selected nursing interventions (massage and breathing exercised positions) on perception of pain during first stage of labour among 60 primi mothers out of which 30 – experimental group and 30 – control group in selected hospitals, Pattukottai, Tanjore district by a true experimental before & after only design. And the tools used were questionnaire for demographic variable and (0-10) combined numerical categorical pain scale for pain score. The post-test mean value was 3.33 and SD 1.86 of experimental group when compared with mean value of 5.64 and SD 2.59, $t = 4.384$, ($p < 0.001$) was statistically significant. This indicates that there was a significant difference in post assessment pain level of perception during first stage of labour in experimental and control group. The selected nursing intervention (massage, breathing exercised positions) to the primi mothers was effective in reducing their labour pain perception.

Latha K. (2005) reported the effectiveness of ice massage over the acupressure meridian point in labour pain perception of 90 parturient mothers who are in the active phase of labour selected by convenient sampling method in Government Hospital, Rayapuram, Chennai by a time series design, with questionnaire for demographic variable and visual analogue numerical pain scale for the pain score as the tool. Using descriptive and inferential statistics, the comparison between the pre and post assessment level of labour pain perceived by the

parturient mother shows that, with an improvement mean of 30.5 and SD 1.17, the "t" value at 90.93 is highly significant at $p < 0.01$ level. This denotes that there is a significant decrease in the level of pain perceived by the parturient mothers following the ice massage over the acupressure meridian point. Administration of ice massage on L4 acupressure meridian point of the left hand of the parturient mother was significant in reducing their perception of labour pain.

Smith C.A., et al (2003) reported an experimental study using complimentary and alternate therapies for pain management in labour, at department of obstetrics and gynaecology, 366 women were selected by using convenient sampling method and they were grouped into different therapies like acupuncture (n=22), involving audio – analgesia (n=55), oil massage (n=100), hypnosis (n= 120), music (n=69). VAS was used to measure pain rate before and after the treatment. The statistical calculation done was frequency, percentage, SD, chi- square, 't' test and 'F' ratio. The study concluded that there was a significant reduction in labour pain due to oil massage and hypnosis ($F=132.5$, $p =0.01$).

Chang M.Y., et al (2002) conducted a study among randomly selected 60 primi parous women on effectiveness of massage on pain and anxiety during labour at a regional hospital in Southern Taiwan. The experimental group: (n= 30) received massage intervention, where as control group (n= 30) did not. Data was collected using present behavioral intensity and visual analogue scale. The result of the study shows that massage is a cost effective nursing intervention that can decrease pain during labour (mean pain score in the massage group in 3 observations = 0.73, 1.73 & 2.17 and in control group = 1.30, 2.10 and 2.87). Twenty six of the 30 (87%) experimental group subjects reported that massage was helpful, providing pain relief and psychological support during labor.

Pilevarzadeh M., et al (2002) studied the effect of massage among randomly selected 60 nulliparous women on reducing pain and anxiety during labour in the Joroft City Hospital, Iran. Cases were randomly assigned to experimental (n =30) and control (n=30) groups. Data was collected using present behavioral intensity & visual analogue scale in both the groups, there was an increase in pain intensity and anxiety level as labor progressed. t-test analysis demonstrated that the experimental group had significantly lower pain reaction in all three phases; Latent phase : p =0.000; Active phase : p = 0.002; Transitional phase : p = 0.000) and anxiety level were significantly different between the 2 groups in the latent phase (p = 0.000).

IV. STUDIES RELATED TO LABOUR PAIN AND CIRCULAR HIP MASSAGE

Kimber L. (2006) observed the effects of various massage techniques (circular hip massage, whole back massage, upper back / shoulder massage, sacral pressure massage, lower circular back massage, leg massage and arm massage) for child birth among 50 parturient mothers with $\geq$ 36 week gestation at the John Radcliffe Hospital, U.K. Data collected by structured questionnaire as the tool. Of the 30 nulliparous and 20 multiparous women, 47 were followed proper massage technique (27 of them were nulliparous and 20 were multiparous). The uptake of analgesia by women employing the massage technique is 9 nullipara (33%) did not require any analgesia and nearly half (48.1%) used just Entonox. All the nulliparous women who did not receive any analgesia had a normal delivery. There was 100% spontaneous vaginal delivery in the multiparous women whereas 81.4% in nulliparous. Four nulliparous underwent forceps / ventous and remaining one delivered by caesarian section. It confirmed that the massage had a positive effect on pain relief and promotes a positive feeling during labour.

Sheeba R. (2009) reported that massage stimulates the body to release endorphins which are natural pain – killing and mood – lifting hormones. Labour massage is important because it brings the patient close to the person who is caring. Gate control theory has described non-pharmacological pain relief associated with labouring women. It has proven that the soothing sensory input from various massage techniques such as stroking, effleurage and kneading activate the 'gate closing' mechanism at spinal level. Types of massages like circular hip massage, whole back massage, upper back / shoulder massage, sacral massage, hand massage and oil massage were found to be effective in reducing anxiety, fear and pain among women in labour.

CHAPTER – III

METHODOLOGY

Methodology is a significant part of any study which enables the researcher to project the research undertaken. Research methodology is a way to systematically solve the research problem.

RESEARCH DESIGN

The selection of research approach is a basic procedure for conducting the study. In view of the problem and objective to be accomplished, evaluative research was considered as an appropriate research approach for the present study.

In the study the investigator could not ensure random selection or random allocation. To be precise the research design selected for the present study is quasi experimental, non-equivalent pretest – post test control group design. In this design, subjects are selected by convenient sampling technique to the experimental group and control group. Labour pain was measured before and after the circular hip massage in the experimental group. Control group received the regular intervention and care.

RESEARCH DESIGN IN NOTATION

E	O_1	X_1	X_1	X_1	X_1	O_2
C	O_3	--	--	--	--	O_4

E	-	Experimental group
C	-	Control Group
O_1, O_3	-	Labour pain in pre-test of experimental and control group
O_2, O_4	-	Post test labour pain experimental and control group
X_1	-	Intervention (circular Hip Massage) with a gap of half an hour.
--	-	No Intervention

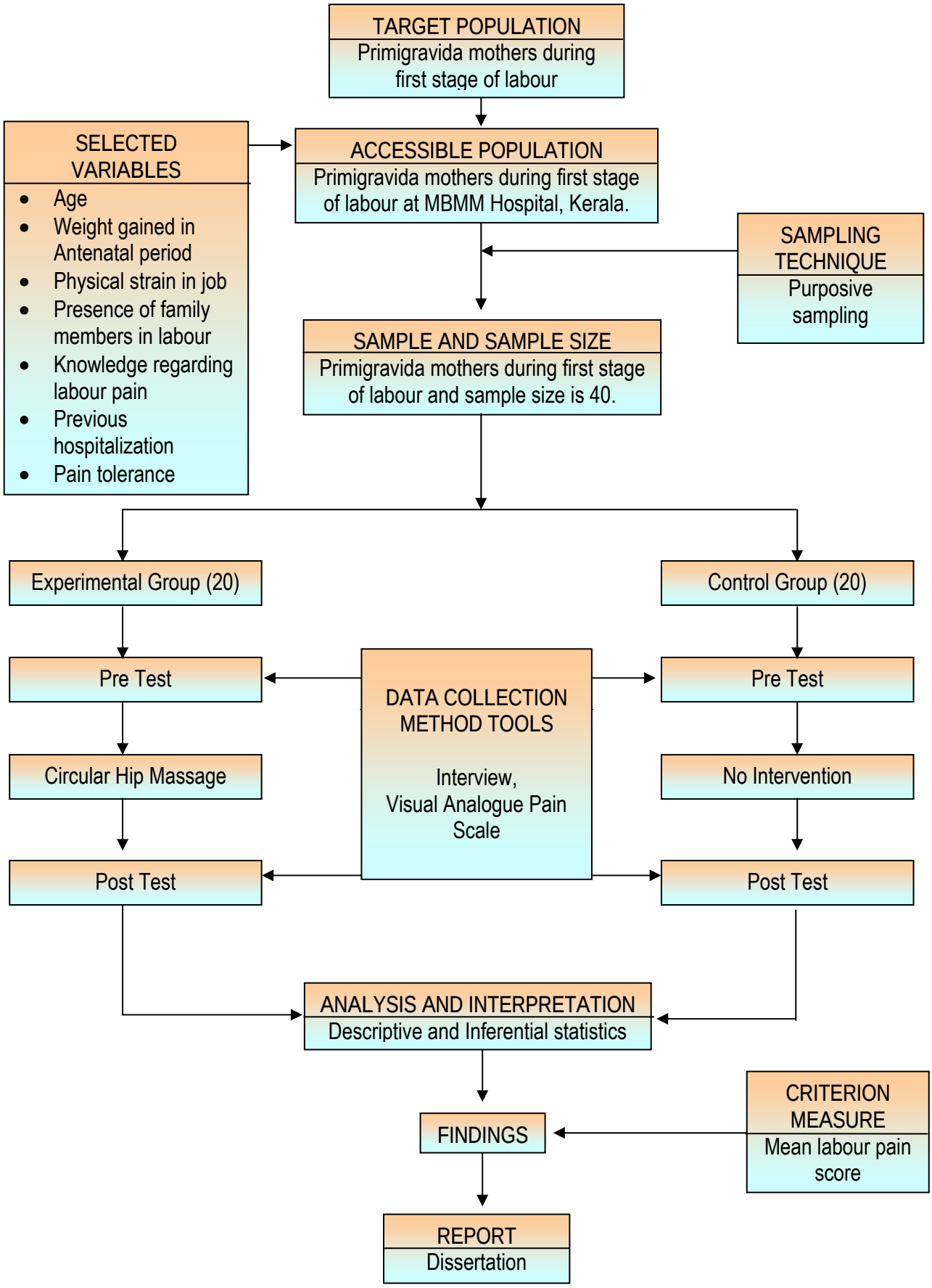


Fig. 2: Schematic Representation of Research Design

SETTING OF THE STUDY

The study was conducted in labour ward of the Mar Baselios Medical Mission Hospital, Kothamangalam, Ernakulam district in Kerala. The average normal delivery in a day was 5 – 7 apart from caesarian section. The proximity, availability of samples, acquaintance of the research with the area and co-operation from the Hospital Authorities were the reason to select the setting.

VARIABLES

The three categories of variables discussed in the present study are:

Independent Variable	:	Circular hip massage
Dependant Variable	:	Labour pain score
Associate Variables	:	Age, weight gained in antenatal period, physical strain in job, presence of family member in labour, knowledge regarding labour pain, previous hospitalization and pain tolerance.

POPULATION

Population may be of two types; accessible population and target population.

Target population: refers to the population that the researcher wishes to make a generalization. In this research, it was primigravida mothers who are in first stage of labour.

Accessible population: refers to the aggregate of cases which confirm to the designed criteria as which is accessible to the researcher as the pool of the subjects or objects. In this research, the accessible population were the primigravida mothers who are in first stage of labour in MBMM Hospital, Kerala.

SAMPLE

Polit and Hungler (1999) state that a sample consists of the subset of the population selected to participate in the research study. The samples in the study were the primigravida mothers of first stage of labour (4 - 6cm cervical dilatation).

SAMPLE SIZE

The sample size was determined based on the type of the study, variables being studied, the statistical significance required, availability of sample and feasibility of conducting the study. The sample size for the study was arbitrarily decided to be 40; 20 in experimental and 20 in control group. Factors like nature of study, availability of sample, time, money and material were considered while deciding the sample size.

SAMPLING TECHNIQUE

In this study purposive sampling technique was used to select subjects according to the sample selection criteria. It entails the use of the most readily available persons or objects based on certain criteria, as subject in the study.

SAMPLING SELECTION CRITERIA

In sampling criteria, the researcher specifies the characteristics of the population under the study by detailing the inclusion and exclusion criteria.

Inclusion Criteria

Specified the characteristics of primigravida mothers:

1. Primigravida mothers aged < 35 years.
2. Mothers who have cervical dilatation 4 to 6 cm.
3. Primigravida mothers undergoing normal vaginal delivery
4. Mothers who can understand and speak Malayalam.
5. Mothers who had no high risk condition.

Exclusion Criteria

Specified issues related to primigravida mothers:

1. Mothers with labour enhancing procedure / drugs.
2. Mothers who are fail to attend regular antenatal visit (a minimum of 3 visits)
3. Mothers who are not willing to participate in the study.

DEVELOPMENT OF THE TOOL

The tool is a written device that a researcher uses to collect the data. After a careful review of literature, the investigator used the visual analogue pain scale to assess pain. However, the demographic variables and health variables are identified by the interview schedule.

DESCRIPTION OF THE TOOL

The study tool consists of two sections.

Section 1: Background variables: It consists of 13 items related to personal and health variable. Verbal responses were obtained from the primigravida mothers regarding age, height, weight gained in antenatal period, religion, physical strain in job, community, family type, presence of family member in labour, practice during pregnancy regularly, knowledge regarding labour pain, previous hospitalization pain tolerance and activity during first stage.

Section 2: Visual Analogue Scale: It consists of a scale ranging from '0' – no pain to '10'- agonizing pain. Provision was made to record the cervical dilatation, fetal heart rate and time of intervention administered.

VALIDITY OF THE TOOL

In the present study content validity was done by 2 obstetrician, 2 nursing experts and 1 physiotherapist. Items with 100% agreement were included in the study and few added.

RELIABILITY OF THE TOOL

Inter-rater method was used to find the reliability of the tool. The reliability of the tool in this study was r = 0.87. The reliability co-efficient was found to be high.

CIRCULAR HIP MASSAGE

Massage is a superficial and deep stroking over the soft tissue. The investigator prepared a circular hip massage guide as specified in Appendix (XI), after extensive search of books, journals, research and non- research publications and websites on the internet. The steps of massage consisted of a preparatory phase, procedure and after massage. This procedure took about 15 minutes. The massage was given to selected primigravida mothers in an interval of 30 minutes for four times. Post test was carried out after half an hour, after the 4th massage. The procedure was validated by five experts.

PILOT STUDY

The pilot study was conducted in MBMM Hospital, Kerala after obtaining the permission from the authorities. From among those who fulfilled the sampling criteria, the researcher selected 8 primi gravida mothers with labour pain as study sample by purposive sampling. On those 8 mothers, 4 were in experimental group and 4 in control group. After getting the consent from each participant, pretest was done. Then intervention for 15 minutes (circular hip massage) was given to experimental group. This was repeated in every half an hour for 4 times. Post test was assessed after half an hour, after the 4th massage by blinding method and the tool was checked for completion. The study was found to be feasible with regard to time, the availability of the subject and cooperation of samples. It also provided information regarding, feasibility, and practicability of the designed methodology. The phenomena were observable and the questions in interview schedule had clarity and simplicity to the level of samples.

DATA COLLECTION PROCEDURE

The study was conducted for 4 weeks in the month of October, 2009. Based on the sampling criteria, a total of forty primi gravida mothers with a labour pain were recruited in the study. Twenty mothers in the experimental group and twenty mothers in the control group were included in the study using purposive sampling method. The objective and purpose of the study were explained and confidentiality was ensured. Informed consent was obtained in the written form. The information regarding the demographic data and health variables were collected from the mother by interview and from the health records.

Pretest was done to observe the level of labour pain. Each observation was made for 5 minutes. The primi gravida mothers in the experimental group were given circular hip massage for 15 minutes, for 4 times in an interval of 30 minutes. Post observation was done in the experimental group after half an hour, after the 4th massage. The primigravida mothers in the control group were given only normal labour care. Post observation was done in the control group after the 3 hours of pretest.

PLAN FOR DATA ANALYSIS

For the present study the researcher collected the data from the primigravida mothers edited and analyzed by using both descriptive and inferential statistical methods.

The plan of data analysis was to

1. Organize data in master sheet.
2. Describe background variables of the primigravida mothers in the experimental group and the control group by frequency and percentage distribution.

3. Test effectiveness of circular hip massage among experimental group by mean scores, standard deviation and “t” test.
4. Find the association between the mean difference in labour pain on selected variables among experimental group by linear regression.

ETHICAL CONSIDERATIONS

The objectives of the study, intervention and data collection procedures were approved by the research and ethical committee of the institution. Informed consent was obtained from the primigravida mothers in written form. The primigravida mothers had the freedom to leave the study at her will without assigning any reason. Due permission from college authorities, hospital authorities was obtained. Explanation regarding the purpose of massage was given to the primigravida mothers involved in the study. Thus the ethical issues were ensured in the study.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

The analysis and interpretation data of this study were based on the data collected through interview schedule among primigravida mothers. The data were entered into excel sheet and results were computed by using inferential and descriptive analysis based on the objective. The data collected were edited, tabulated and analyzed using SPSS version 10 probability value of less than 0.05 was considered to be significant.

The objectives of the study were

1. To assess the significant difference between the pre and post test mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage.

2. To compare the significant mean difference in labour pain score among primigravida mothers in the experimental and control group.

3. To determine the association between the mean difference in labour pain score and selected variables among primigravida mothers in the experimental group.

Findings were presented in the forms of tables, and diagrams under the following sections.

The data analyzed were presented as follows:

Section – I : Data on background variables of primigravida mothers in the experimental and control group.

Section – II : Data on pre and post test mean labour pain score among primigravida mothers in experimental group.

Section – III : Data on mean difference in labour pain score among primigravida mothers in experimental and control group.

Section – IV : Data on association between the mean difference in labour pain score and selected variables among primigravida mothers in experimental group.

SECTION – I: DATA ON BACKGROUND VARIABLES OF PRIMIGRAVIDA MOTHERS IN THE EXPERIMENTAL AND CONTROL GROUP

TABLE – 1

Frequency and percentage distribution of the primigravida mothers in the experimental and control group regarding their background variables

Background Factors	*Experimental group (n=20)*		*Control group (n=20)*		*χ^2 Value*
	No.	*%*	*No.*	*%*	
Height					$\chi^2 = 0.000$
a) < 145cm	2	10	2	10	(p = 1.000)
b) ≥145cm	18	90	18	90	(NS)
Physical strain in the job					$\chi^2 = 0.000$
a) Severe	0	0	0	0	(p = 1.000)
b) Moderate	8	40	8	40	(NS)
c) Mild	12	60	12	60	
Community					$\chi^2 = .902$
a) Rural	11	55	8	40	(p = .342)
b) Urban	9	45	12	60	(NS)
Type of family					$\chi^2 = .143$
a) Joined	16	80	15	75	(p = 0.705)
b) Nuclear	4	20	5	25	(NS)
Presence of family member in labour					$\chi^2 = 1.026$
a) Mother	20	100	19	95	(p = 0.311)
b) Husband	0	0	0	0	(NS)
c) Other	0	0	1	5	

Background Factors	*Experimental group (n=20)*		*Control group (n=20)*		*χ^2 Value*
	No.	*%*	*No.*	*%*	
Practice during pregnancy regularly					
a) Walking	0	0	0	0	χ^2 = .107 (p = 0.744) (NS)
b) Antenatal exercise	0	0	0	0	
c) Regular occupation	8	40	7	35	
d) Household job	12	60	13	65	
e) None	0	0	0	0	
Knowledge regarding labour pain					χ^2 = 1.026 (p = 0.311) (NS)
a) Yes	5	25	8	40	
b) No	15	75	12	60	
Previous hospitalization					χ^2 = 0.000 (p = 1.000) (NS)
a) Yes	4	20	4	20	
b) No	16	80	16	80	
Activity during first stage					
a) Walking	0	0	0	0	---
b) Bed rest	20	100	20	100	
c) Any other	0	0	0	0	

NS = Not Significant

Table 1 reveals the frequency and percentage distribution of primigravida mothers in the experimental and control group regarding their background variables.

Regarding height in both experimental and control group, majority of primigravida mothers 18(90%) were ≥ 145cm, least 2(10%) were < 145cm. the obtained χ^2 =0.000 (p =1) was not significant.

Regarding physical strain in the job, in both experimental and control group majority of primigravida mothers 12(60%) were mild, least 8(40%) were moderate. The obtained $\chi^2 = 0.000$ ($p = 1$) was not significant.

Regarding community, in experimental group, majority of primigravida mothers 11(55%) were from rural area, least 9(45%) were from urban area. Among control group, majority of primigravida mothers 12(60%) were from urban area, least 8(40%) were from rural area. The obtained $\chi^2 = 0.902$ ($p = 0.342$) was not significant.

Regarding type of family, majority of primigravida mothers 16(80%) belonged to joint family, least 4(20%) belonged to nuclear family. Among the control group, majority of primigravida mothers 15(75%) belonged to joint family, least 5(25%) belonged to nuclear family. The obtained $\chi^2 = 0.143$ ($p = 0.705$) was not significant.

Regarding presence of family member in labour, in experimental group, all primigravida mothers 20(100%) had their mother's presence. In control group, majority of primigravida mothers 19(95%) had their mother's presence, least 1(5%) had other's presence. The obtained $\chi^2 = 1.026$ ($p = 0.311$) was not significant.

Regarding practice during pregnancy regularly, in experimental group, majority of primigravida mothers 12(60%) were doing household job, least 8(40%) were doing regular occupation. Among control group, majority of primigravida mothers 13(65%) were doing house hold job, least 7(35%) were doing regular occupation. The obtained $\chi^2 = 0.107$ ($p = 0.744$) was not significant.

Regarding knowledge related to labour pain, in experimental group, majority of primigravida mothers 15(75%) were ignorant about labour pain, least 5(25%) were had knowledge regarding labour pain. Among the control group, majority of primigravida mothers 12(60%) were ignorant about labour pain, least 8(40%) were had knowledge about labour pain. The obtained $\chi^2 = 1.026$ ($p = 0.311$) was not significant.

Regarding previous hospitalization, in experimental and control group, majority of primigravida mothers 16(80%) were had no history of hospitalization, least 4(20%) were had history of hospitalization. The obtained $\chi^2 = 0.000$ ($p = 1$) was not significant.

Regarding activity during first stage, in both experimental and control group, all primigravida mothers 20(100%) were in bed rest.

It was inferred that, majority of primigravida mothers in experimental group ≥145cm height, had mild physical strain in their job, belonged to rural area, were from joint family, had their mother's presence, were doing household job, were ignorant about labour pain, had no history of hospitalization and were in bed rest.

It was inferred that, majority of primigravida mothers in control group, were ≥145cm height, had mild physical strain in their job, belonged to urban area, were from joint family, had their mother's presence, were doing household job, were ignorant about labour pain, had no history of hospitalization and were in bed rest.

There was no significant association between the background variables and the groups. The groups were comparable.

Figure 3 reveals the frequency and percentage distribution of primigravida mothers in the experimental group and control group regarding age, majority of primi gravida mothers 12(60%) were in the age group of 21-25 years, least 4(20%) were in the age group of 16-20 years and 26-30 years and none of them in the age group of 31-35 years. Among the control group, majority of primi gravida mothers 11(55%) were in the age group of 21-25 years, least 5(25%) were in the age group of 26-30 years, and 4(20%) were in the age group of 16-20 years and none of the them were in the age group of 31-35 years. The obtained $\chi^2 = 0.155$ ($p = 0.926$). Therefore the groups were comparable with regard to the age group.

It was inferred that majority of the primigravida mothers in experimental group were in the age group of 21-25 years. Also in the control group, majority of the primigravida mothers were in the age group of 21-25 years.

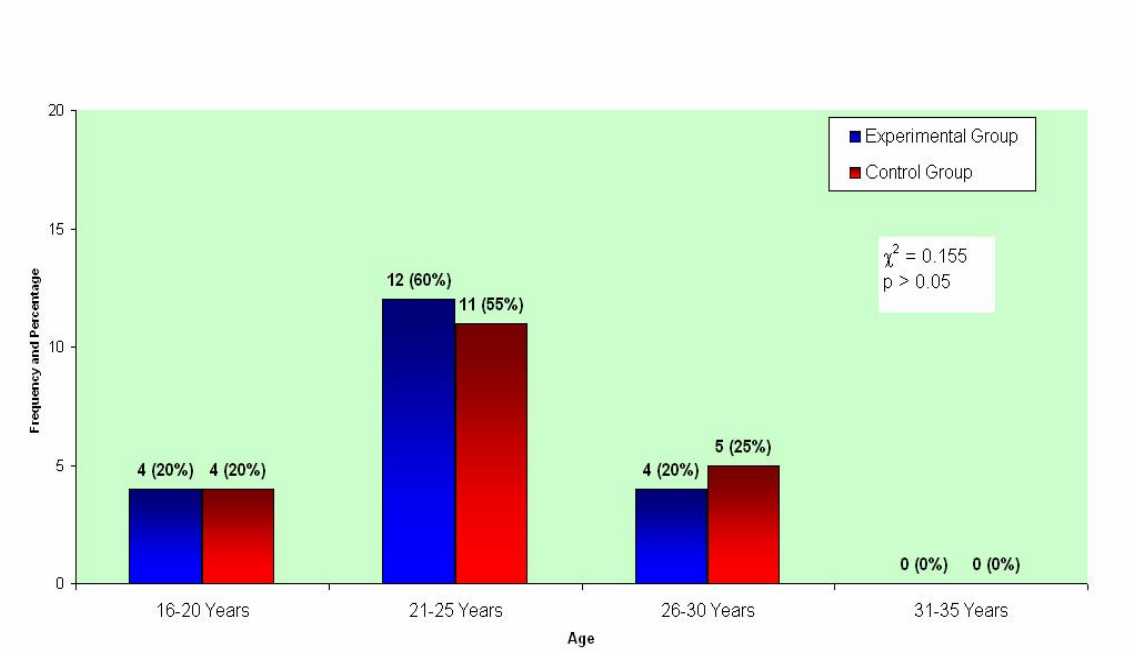


FIG. 3: Frequency and Percentage distribution of primigravida mothers in experimental and control group regarding Age

Figure 4 reveals the frequency and percentage distribution of primigravida mothers in the experimental group and control group regarding weight gained in antenatal period, majority of primigravida mothers 19(95%) were gained weight ≥10 kg and least 1(5%) were gained weight <10kg in experimental group. Among the control group, majority of primigravida mothers 17(85%) were gained weight ≥10kg and least 3(15%) were gained weight <10kg. The obtained $\chi^2 = 1.111$ ($p = 0.292$).

It was inferred that the majority of primigravida mothers in both experimental and control group were gained weight ≥10kg in antenatal period.

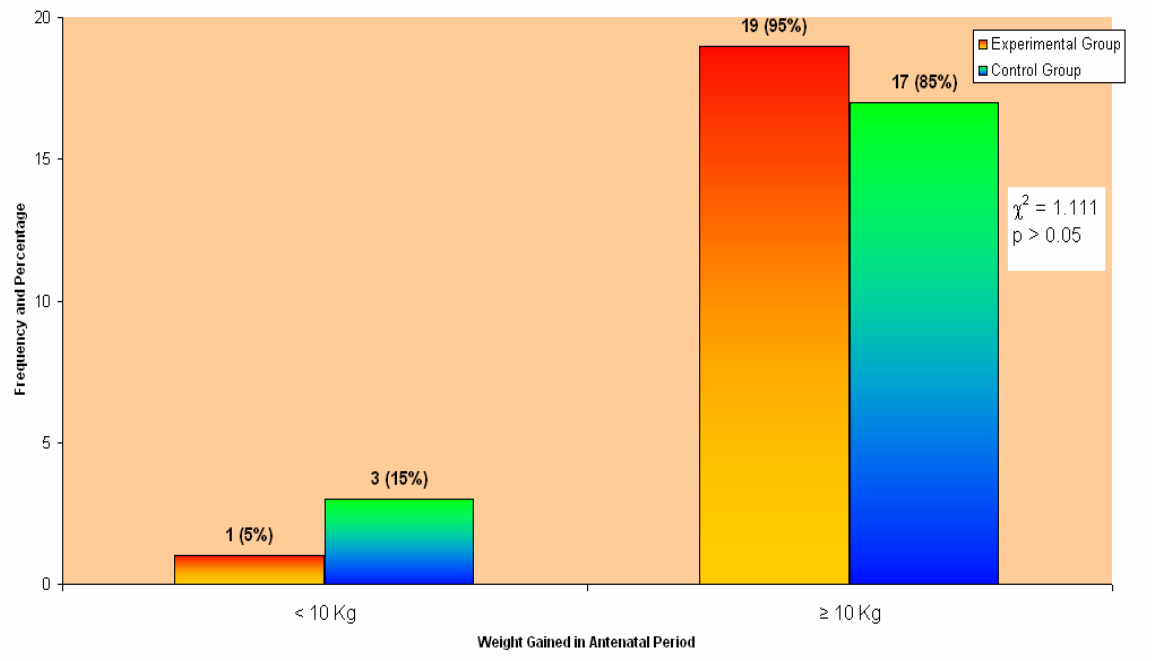


FIG. 4: Frequency and Percentage distribution of primigravida mothers in experimental and control group regarding weight gained in antenatal period.

Figure 5, reveals the frequency and percentage distribution of primigravida mothers in the experimental group and control group regarding **religion**, majority of primigravida mothers 12(60%) were Christians, least 5(25%) were Muslim and 3(15%) were Hindus and none of them were from other caste in experimental group. Among the control group, majority of primigravida mothers 10(50%) were Christians, least 7(35%) were Muslims and 3(15%) were Hindus and none of them were from other caste. The obtained χ^2 = 0.515 (p = 0.713). Therefore the groups were comparable with regard to religion.

It was inferred that the majority of the primigravida mothers in experimental group and control group were Christians.

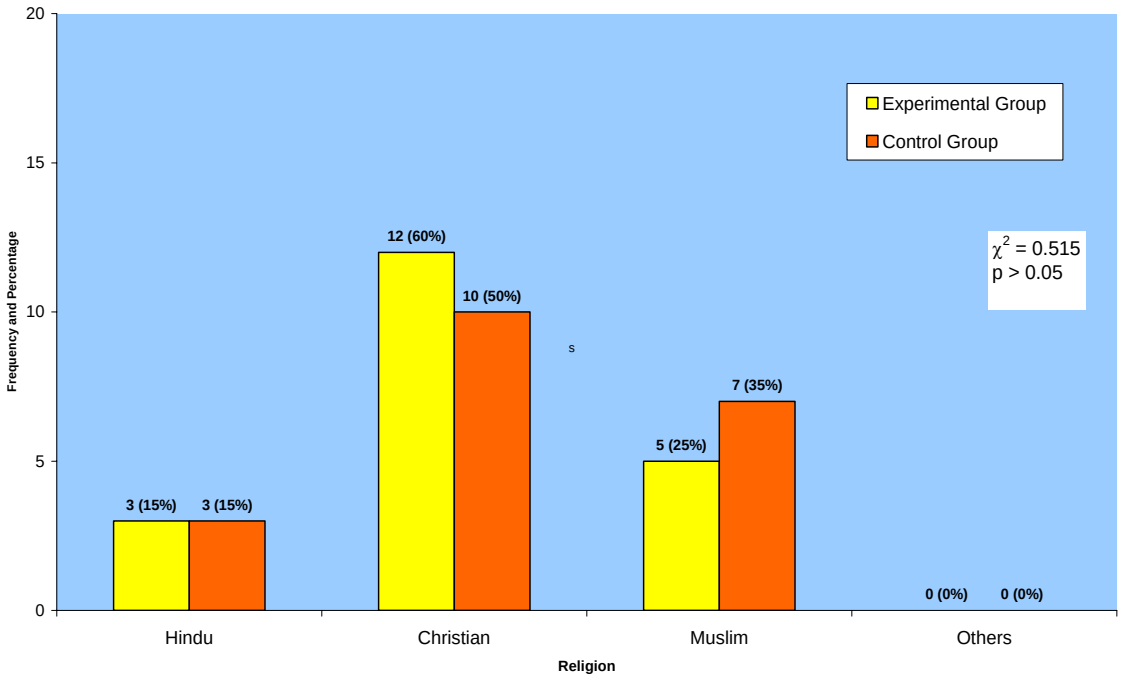
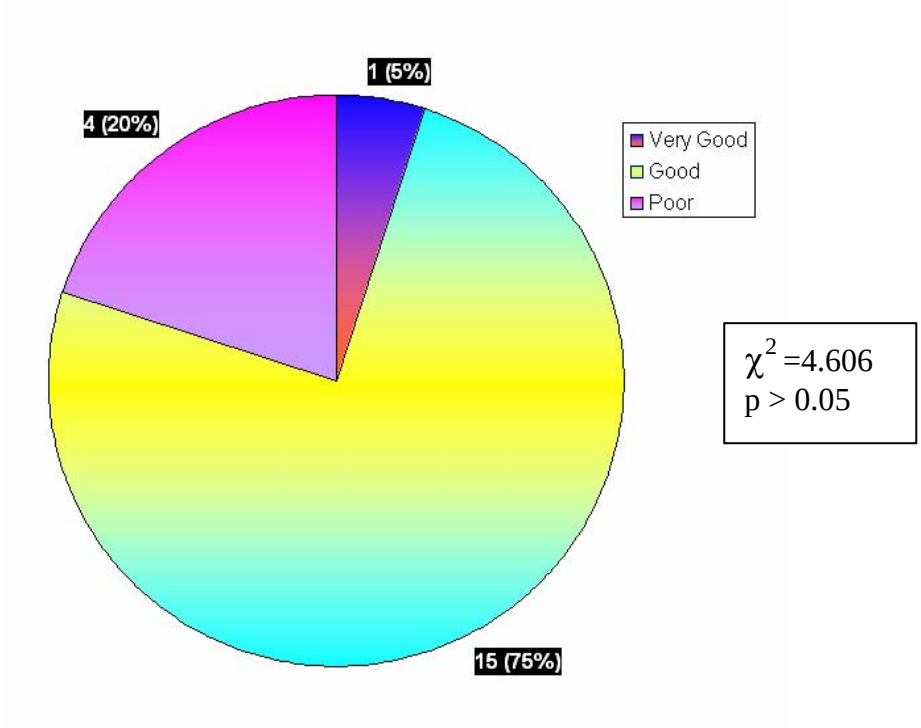


FIG. 5: Frequency and Percentage distribution of primigravida mothers in experimental and control group regarding Religion

Figure 6, reveals the frequency and percentage distribution of primigravida mothers in the experimental and control group regarding pain tolerance, majority of primigravida mothers 15(75%) had good pain tolerance, least 4(20%) had poor pain tolerance and 1(5%) had very good pain tolerance but none of them were in very poor pain tolerance in experimental group. Among the control group, majority of primigravida mothers 18(90%) had good pain tolerance, least 2(10%) had very good pain tolerance and none of them had poor and very poor pain tolerance. The obtained $\chi^2 = 4.606$ ($p = 0.100$). Therefore the groups were comparable with regard to pain tolerance.

It was inferred that the majority of the primigravida mothers in experimental group and control group had good pain tolerance.

Experimental Group



Control Group

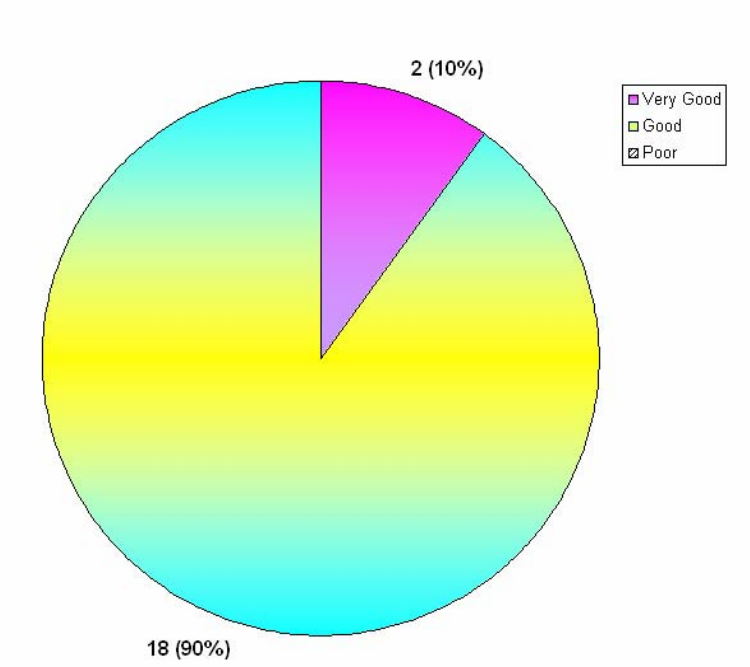


FIG. 6: Frequency and Percentage distribution of primigravida mothers in experimental and control group regarding pain tolerance.

SECTION II: DATA ON PRE AND POST TEST MEAN LABOUR PAIN SCORE AMONG PRIMIGRAVIDA MOTHERS IN EXPERIMENTAL GROUP

For the purpose of the study, the following null hypothesis was stated.

H_{01} : There will be no significant difference in the mean labour pain score among primigravida mothers in the experimental group before and after circular hip massage.

TABLE – 2

Mean, SD, mean difference and 't' value on mean labour pain score before and after circular hip massage in experimental group.

N=20

Group	*Test*	*Mean*	*Standard Deviation*	*Mean Difference*	*t' value* (p)
Experimental Group	Pre test	4.30	0.80	-2.25	-22.650 (p<0.001) S
	Post test	6.55	0.76		

S = significant

Table 2 reveals the mean, SD, mean difference and 't' value on mean labour pain score before and after circular hip massage in experimental group.

The mean pre test pain score 4.30 (SD = 0.80) was less than the mean post test pain score 6.55 (SD = 0.76) in experimental group. The obtained 't' value, t = -22.650, ($p < 0.001$) was significant. Therefore the null hypothesis H_{01} was rejected.

It was inferred that the primigravida mothers in experimental group had significant difference in mean labour pain after circular hip massage. The circular hip massage in labour pain is inevitable, because the labour and the pain associated with the process is progressive in nature.

SECTION III: DATA ON MEAN DIFFERENCE IN LABOUR PAIN SCORE AMONG PRIMIGRAVIDA MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

For the purpose of the study, the following null hypothesis was stated.

H_{02} : There will be no significant difference in the mean difference in labour pain score among primigravida mothers between the experimental and control group.

TABLE – 3

Mean, SD, mean difference and 't' value on labour pain score between experimental and control group

Group	*Mean difference*	*Standard Deviation*	*Difference in Mean difference*	*'t' value* (p)
Experimental group (n=20)	2.25	0.44	-2.45	-11.273 (p <0.001) S
Control group (n=20)	4.70	0.86		

S = Significant

Table – 3 reveals the mean, SD, mean difference and 't' value on labour pain score between primigravida mothers in experimental and control group.

The mean labour pain among primigravida mothers in experimental group 2.25 (SD = 0.44) was less than the control group 4.70 (SD = 0.86). The obtained mean difference was -2.45. The obtained 't' value, t = -11.273, (p < 0.001) was significant. Therefore, null hypothesis H_{02} was rejected.

It was inferred that, the primigravida mothers in experimental group had significant reduction in intensity of labour pain after circular hip massage than the control group. The circular hip massage was found to be effective.

SECTION IV: DATA ON ASSOCIATION BETWEEN THE MEAN DIFFERENCE IN LABOUR PAIN SCORE AND SELECTED VARIABLES AMONG PRIMIGRAVIDA MOTHERS IN EXPERIMENTAL GROUP

For the purpose of the study, the following null hypothesis was stated.

H_{03}: There will be no significant association between mean difference in labour pain score and selected variables among primigravida mothers in the experimental group.

TABLE – 4

Linear regression regarding the mean difference in labour pain score and selected variables among the primigravida mothers in experimental group.

Background	*Standardized coefficient (beta)*	*'t' value*	*Significance (p)*
Age	0.094	0.490	0.628 (NS)
Weight gained in antenatal period	0.078	0.344	0.734 (NS)
Physical strain in the job	-0.912	-1.650	0.111 (NS)
Presence of family member in labour	0.261	1.038	0.308 (NS)
Knowledge regarding labour pain	-0.297	-1.554	0.132 (NS)
Previous hospitalization	-0.041	-0.222	0.826 (NS)
Pain tolerance	-0.216	-1.155	0.258 (NS)

NS=Not Significant

Table 4, reveals linear regression regarding the mean difference in labour pain score and selected variables among the primigravida mothers in experimental group.

The obtained 't' values regarding selected background variables such as age t = 0.490 (p = 0.628); weight gained in antenatal period t = 0.344 (p = 0.734); physical strain in the job, t = -1.650 (p = 0.111); presence of family member in labour t = 1.038 (p = 0.308); knowledge regarding labour pain t = -1.554 (p = 0.132); previous hospitalization t = -0.222 (p = 0.826) and pain tolerance t = -1.155 (p = 0.258) were not significantly (p > 0.05) associated with mean difference labour pain score among primigravida mothers in experimental group. Therefore the mean difference in labour pain score was independent of these selected variables.

It was inferred that circular hip massage was independently effective of all selected variables in reducing labour pain among primigravida mothers in experimental group.

CHAPTER – V

SUMMARY, FINDINGS, DISCUSSION, IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

The essence of any research project is based on study findings, limitations, interpretation of the result and recommendations that incorporate the study implications. It also gives meaning to the results obtained in the study.

SUMMARY

The primary aim of the study was to evaluate the effectiveness of Circular Hip Massage on reduction of the labour pain among the primigravida mothers.

The objectives of the study were

1. To assess the significant difference between the pre and post test mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage.

2. To compare the significant mean difference in labour pain score among primigravida mothers in the experimental and control group.

3. To determine the association between the mean difference in labor pain score and selected variables among primigravida mothers in the experimental group.

The study attempted to examine the following research findings.

H_1 : There will be a significant difference in the mean labour pain score among the primigravida mothers in the experimental group before and after circular hip massage.

H_2 : There will be a significant difference in the mean difference in labour pain score among the primigravida mothers between the experimental and control group

H_3 : There will be a significant association between mean difference in labour pain score and selected variables among primigravida mothers in the experimental group.

The review of literature helped the investigator to develop conceptual framework, tools and development of circular hip massage guide. Literature review was done for the present study and was presented in the following study headings: Studies related to labour pain perception; Studies related to massage therapy on pain in general; Studies related to labour pain and massage; Studies related to labour pain and circular hip massage.

The conceptual framework adopted for the present study was based on the Gate control theory of pain developed by Malzack's and Wall (1965).

The present study was quasi experimental research design (non-equivalent control group pre-test post-test design). Independent variable in the study was circular hip massage and the dependent variable was labour pain score. Attribute variable for this study were age, weight gained in antenatal period, physical strain in job, presence of family member in labour, knowledge regarding labour pain, previous hospitalization and pain tolerance.

The tool developed and used for data collection was a visual analogue pain scale to assess the labour pain. Structured interview schedule was developed and used for collecting data regarding the background variables. The circular hip massage was developed on the basis of related literature. The content validity of the tool was established by five experts. The tool was found to be reliable and feasible. The reliability of the tool was established the inter-rater reliability method, reliability co-efficient was found to be high, r = 0.87.

The pilot study was conducted among eight primigravida mothers in MBMM Hospital, Kothamangalam, Ernakulam District, Kerala and the study was found to be feasible.

The main study was conducted in MBMM Hospital, Kothamangalam, Ernakulam District, Kerala. Prior permission from the authorities was sought and obtained. Individual informed consent was taken from study samples. The study samples were selected by purposive sampling method based on sample selection criteria. A total of forty primigravida mothers with labour pain were selected and included in two groups: twenty in experimental and twenty in control group. Pre-test was done. In experimental group, circular hip massage was given for 15 min., for 4 times in the interval of 30 min. Post-test was done after three hours in both experimental and control group. The data gathered were analyzed and interpreted based on the objectives by using SPSS package (version 10). A probability of less than 0.05 was used to reject the null hypothesis.

CHARACTERISTICS OF STUDY SAMPLES

The majority of primigravida mothers in experimental group were in the age group of 21-25 years 12 (60%), with ≥145cm height 18 (90%), gained weight ≥10kg in antenatal period 19 (95%), were Christians 12 (60%), had mild physical strain in their job 12 (60%), belonged to rural area 11 (55%), were from joint family 16 (80%), had their mother's presence 20 (100%),

were doing household job 12 (60%), were ignorant about labour pain 15 (75%), had no history of hospitalization 16 (80%), had good pain tolerance and were in bed rest 20 (100%).

The majority of primigravida mothers in control group were in the age group of 21-25 years 12 (60%), with ≥145cm height 18 (90%), gained weight ≥10kg in antenatal period 19 (95%), were Christians 12 (60%), had mild physical strain in their job 12 (60%), belonged to urban area 12 (60%), were from joint family 15 (75%), had their mother's presence 19 (95%), were doing household job 13 (65%), were ignorant about labour pain 12 (60%), had no history of hospitalization 16 (80%), had good pain tolerance and were in bed rest 20 (100%).

FINDINGS

The major findings of the study were presented under the following headings based on the objectives of the study.

Objective 1: To assess the significant difference between the pre and post test mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage.

- There was a significant difference in the mean labour pain scores of before and after circular hip massage in the experimental group, t = -22.650 ($p<0.001$). However labour pain is progressive in nature.

Objective 2: To compare the significant mean difference in labour pain score among primigravida mothers in the experimental and control group.

- There was a significant reduction in mean labour pain after circular hip massage, t = -11.273 ($p < 0.001$) in the experimental group than the control group regarding circular hip massage.

Objective 3: To determine the association between the mean difference in labor pain score and selected variables among primigravida mothers in the experimental group.

- There was no significant association between the mean difference in pain score before and after circular hip massage and the selected variables such as age t = 0.490 ($p > 0.05$), weight gained in antenatal period t = 0.344 ($p > 0.05$), physical strain in the job, t = -1.650 ($p > 0.05$), presence of family members in labour t = 1.038 ($p > 0.05$), knowledge regarding labour pain t = -1.554 ($p > 0.05$), previous hospitalization t = -0.222 ($p > 0.05$), and pain tolerance t = -1.155 ($p > 0.05$) among experimental group.

DISCUSSION

The results of the study were discussed based on the findings of the study.

Finding 1: Findings on mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage.

- There was a significant difference in the mean labour pain scores of before and after circular hip massage in the experimental group, t = -22.650 ($p<0.001$). However labour pain is progressive in nature.

Ohel I., et al (2007) reported that "there was a significant rise in pain threshold during labour in term pregnancies". Wijma, et al (2001) reported that "primi para women had a higher level of pain than multiparous women". Cambell and Kurtz (2000) reported that "when the cervical dilatation increased, there was a significant increase in self-report pain".

Finding 2: Findings on mean difference in labour pain score among primigravida mothers in the experimental and the control group.

- There was a significant reduction in the mean labour pain after circular hip massage, $t = -11.273$ ($p < 0.001$) in the experimental group than the control group regarding circular hip massage.

Kimber L. (2006) reported that "the circular hip massage had a positive effect on pain relief and promotes a positive feeling during labour"; while Sheeba R. (2009) reported that "circular hip massage was found to be effective in reducing anxiety, fear and pain among women in labour".

Finding 3: Findings on association between the mean difference in labour pain score and selected variables among primigravida mothers in the experimental group.

- There was no significant association between the mean difference in pain score before after circular hip massage and the age $t = 0.490$, ($p > 0.05$), weight gained in antenatal period $t= 0.344$ ($p > 0.05$), physical strain in the job $t= -1.650$ ($p > 0.05$), presence of family member in labour $t= 1.038$ ($p > 0.05$), knowledge regarding labour pain $t = -1.554$ ($p > 0.05$), previous hospitalization $t= -0.222$ ($p > 0.05$), and pain tolerance $t = -1.155$ ($p > 0.05$) among experimental group.

IMPLICATIONS

The findings of the study have the following implications in nursing.

Implications for Nursing Practice

1. Circular hip massage is a cost effective measure to block the pain pathway. Midwives should effectively use this measure to reduce the labour pain.
2. Circular hip massage helps in reducing the need and frequency of administration of analgesics.
3. Circular hip massages help to conserve the energy of the mother during the first stage of her labour, which helps to put her own effort during the second stage.
4. Midwives can plan the goal of nursing management and enhance the nurse - patient relationship and a sense of well being to the mother through the development of mutually agreed goals.
5. Circular hip massage therapy should be an integral part of pain relief in the nursing management of labour pain.

Implication for Nursing Education

1. Nurse educators should encourage nursing students to utilize circular hip massage as a measure for the labour pain reduction.

Implications for Nursing Administration

1. Midwifery department should have a policy decision to use the circular hip massage therapy as an essential nursing activity to reduce the labour pain.
2. Administrators must provide adequate training facilities for effective nursing care to the mothers in labour.

Implications for Nursing Research

1. The study will be a valuable reference material for future researcher.
2. The findings of the study would help to expand the scientific body of professional knowledge upon which further researches can be conducted.
3. Circular hip massage therapy may be studied more scientifically and used as a specific nursing intervention.

LIMITATIONS

1. It needs much explanation to get consent from the mothers and her relatives; since they think that this massage procedure may completely stop or reduce the labour progress.
2. The samples taken were only 20 for the experimental group and 20 for the control group.
3. The data was collected using purposive sampling.
4. The samples taken were only primigravida mothers.

RECOMMENDATIONS

1. Similar study can replicate on a large scale.
2. A similar study can be conducted in another way as, massage by doulas who are closer and always with the mother in labour.
3. A comparative study can be conducted between the private set up and government set up.
4. Similar study can be conducted in other ways like increasing the frequency and the duration of circular hip massage.

CONCLUSION

Primigravida mothers had a reduction in the labour pain as evidenced by the results shown in Visual Analogue Pain Scale. Hence circular hip massage was found to be a cost effective procedure in reducing labour pain among primigravida mothers.

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5. www.elsever.com
6. www.msn.com
7. www.about.com

APPENDIX - I

LETTER REQUESTING OPINION AND SUGGESTION OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH TOOL

From,

30083621
II YEAR M.S.c (N),
Annai JKK Sampoorani Ammal College of Nursing,
Komarapalayam 638183,
Namakkal district.

To,

Through,
The Dean,
Annai J.K.K. Sampoorani Ammal College of Nursing,
Komarapalayam- 638183.

Respected Sir / Madam,

Sub: Letter requesting consent to validate the tool

I am, 30083621, II year M.S.c (N) student studying at Annai J.K.K Sampoorani Ammal College of Nursing, Komarapalayam. I have selected the following topic for research "A study to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala". In partial fulfillment of the requirement for the award of the Degree of Master of Nursing under the Tamilnadu Dr. MGR Medical University, Chennai.

Here with I have enclosed the tool for its content validity and request you to kindly examine the tool and give your valuable opinion and suggestions.

Thanking you.

Place: Komarapalayam
Date:

yours sincerely,

(30083621)

APPENDIX - II

LIST OF EXPERTS

1. Dr. HEMALATHA, MBBS, DGO
   Joseph Hospital,
   Erode.

2. Dr. SUMATHI, MBBS, DGO
   Nishanth Hospital,
   Erode.

3. Dr. Mrs. TAMILMANI, MSc., Ph.D
   Principal,
   Annai JKK Sampoorani Ammal College of Nursing,
   Komarapalayam.

4. Mrs. M.P. THENMOZHI, BPT
   Dept. of Exercise Therapy and Massage,
   JKK Munirajahh College of Physiotherapy,
   Komarapalayam.

5. Mrs. THANGAMANI, MSc. (N)
   Obstetrics and Gynaecology Nursing Department,
   Annai JKK Sampoorani Ammal College of Nursing,
   Komarapalayam.

APPENDIX - III

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of 30083621, M.Sc(N) student of MATERNITY HEALTH NURSING specialty studying at Annai J.K.K. Sampoorani Ammal college of Nursing, Komarapalayam, who is undertaking the following study "A study to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala".

Place: Komarapalayam

Date:

Signature of the Expert

Designation

APPENDIX - IV

LETTER FOR THE PERMISSION TO CONDUCT THE RESEARCH STUDY

From,

30083621
II year M. Sc (Nursing),
Annai J. K. K. Sampoorani Ammal college of Nursing,
Komarapalayam- 638183.

To,

Through,

The Dean,
Annai J. K. K. Sampoorani Ammal college of Nursing,
Komarapalayam- 638183.

Respected Sir,

Sub: Seeking permission to conduct the research study.

I (Reg. No.: 30083621), II year M. Sc. Nursing student of Annai J.K.K. Sampoorani Ammal college of Nursing, Komarapalayam, under The TamilNadu Dr. M.G.R. Medical University, Chennai .

I would like to bring to your kind notice that as a partial fulfillment of M.Sc. Nursing programme, I am conducting “a study to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala”.

I would like to conduct this research study in your esteemed Hospital. Hence I request you to kindly grant permission for the same.

Thanking you,

Date: Yours faithfully,
Place:

30083621

APPENDIX – V

CONSENT FORM

I, _____ understand that I am being asked to participate in a research study, conducted by 30083621, II year MSc (N) student from Annai JKK Sampoorani Ammal College of Nursing, on “A study to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala”. This study has been explained to me and I clearly understand about the importance of circular hip massage in decreasing the pain during labour. The procedure was clearly explained to me. I realize that my participation in the study is entirely voluntary and I can withdraw from this study at any time. I understand that all study data will be kept confidential and will not be utilized for any other purposes. Thereby, I agree to participate and would co-operate with the procedure.

Date: Signature of the primigravida mother

Signature of the investigator

APPENDIX – VI

Ph : 0091 - 04288 - 260032, 260588, Fax : 266760

J.K.K.MUNIRAJAHH MEDICAL RESEARCH FOUNDATION

COLLEGE OF PHYSIOTHERAPY

Ethirmedu, **B.Komarapalayam - 638 183.** Namakkal Dist, Tamilnadu, India.

Rtn. PHF. **Dr. J.K.K.MUNIRAJAHH** M.Tech., (Bolton)
Correspondent

D.KANNAN M.P.T (Neuro), M.Sc (Psy).,MIAP
Principal

18.09.2009

CERTIFICATE

This is to certify that 30083621 II Year M.Sc Nursing has been taught the Hip Circular Massage Technique for Labour Pain in department of physiotherapy under the supervision of **Mrs.M.P.THENMOZHI**, B.P.T. MIAP., from **17.08.2009 to 21.08.2009**.

H.O.D.
Exercise Therapy & Massage

18/9/09.
PRINCIPAL

PRINCIPAL,
COLLEGE OF PHYSIOTHERAPY,
J.K.K. Munirajahh Medical Research Foundation,
KOMARAPALAYAM-638 183,
TAMIL NADU, INDIA.

APPENDIX – VII

Phone : 0485-2822203 to 2822207
Fax : 0485 - 2822329
E-mail : mbmmhospital@sify.com

Mar Baselios Medical Mission Hospital

(A Charitable Society Reg. No. ER. 186/77)

(Under the Auspices of the Mar Thoma Cheria Pally)

KOTHAMANGALAM - 686 691, KERALA, INDIA.

Date.....
16/11/2009.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that 30083621 II year MSc Nursing Student of Annai J.K.K Sampoorani Ammal College of Nursing, Komarapalayam, under the Tamil Nadu Dr.M.G.R Medical University, Chennai has successfully completed her research study in this hospital from 05/10/2009 to 30/10/2009.

During this period she was disciplined and maintained all code of conduct of the hospital.

MAR BASELIOS MEDICAL MISSION HOSPITAL * KOTHAMANGALAM *

ADMINISTRATOR

APPENDIX - VIII

ANTENATAL SCREENING FORM FOR SELECTING THE SAMPLE

The factors used for finding the eligible samples are:

(1) Age of the mother _____ years

(2) Pregnancy – primi / multi gravida

(3) Cervical dilatation _____ c.m.

(4) Had regular antenatal visits (a minimum of 3 visits) – yes / no

(5) Singleton pregnancy - yes / no

(6) Antenatal complications – yes /no

(7) Labour enhancing procedure / drugs – yes / no

(8) Fetal heart rate _____ / min.

Impression: Eligible / Not Eligible

Signature of the investigator

APPENDIX - IX

INTERVIEW / OBSERVATION SCHEDULE ON THE LABOUR PAIN AMONG THE PRIMI GRAVIDA MOTHERS

Code No:……

PART I: BACKGROUND VARIABLES

Instruction: This section seeks certain information regarding the primi mothers. The interviewer is requested to pose the question and get responses one by one. The best choices opted by the respondent may be marked by placing in appropriate option.

1. Age
    a. 16 - 20 years ☐
    b. 21 - 25 years ☐
    c. 26 - 30 years ☐
    d. 31 - 35 years ☐

2. Height of the mother
    a. Less than 145 cm. ☐
    b. 145 cm. and above ☐

3. Net weight gained in antenatal period (verify the record)
    a. < 10 kg. ☐
    b. ≥ 10 kg. ☐

4. Religion

   a. Hindu ☐
   b. Christian ☐
   c. Muslim ☐
   d. Others _____ Specify ☐

5. State the physical strain in your work / job

   a. Severe ☐
   b. moderate ☐
   c. mild ☐

6. Community

   a. Rural ☐
   b. Urban ☐

7. Type of Family

   a. Joint ☐
   b. Nuclear ☐

8. Presence of family members while mother in labor.(waiting period)

   a. Mother ☐
   b. Husband ☐
   c. Other ☐

9. Did you practice any of the following during pregnancy regularly till now?

a. Walking ☐
b. Antenatal exercise ☐
c. Regular occupation ☐
d. Household job(cleaning, cooking) ☐
e. None ☐

10. Ever taught regarding labor pain?

a. Yes ☐
b. No ☐

11. Ever admitted to hospital before?

a. Yes ☐
b. Nil ☐

12. How do you rate you ability to tolerate pain in general?

a. Very good ☐
b. Good ☐
c. Poor ☐
d. Very poor ☐

13. Activity of mother during first stage, other than massage?

a. Walking ☐
b. Bed rest ☐
c. Any other ☐

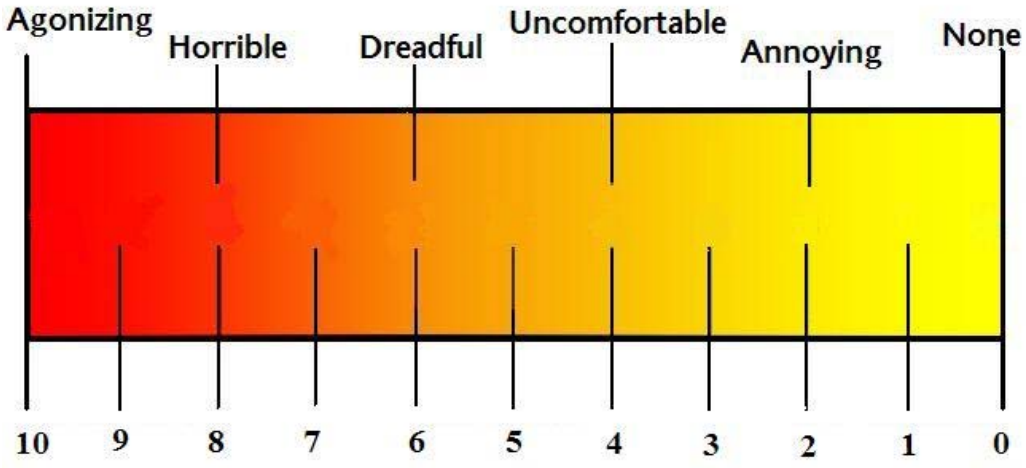
PART – II

VISUAL ANALOGUE PAIN SCALE

Code No.: ……

Instruction:

The interviewer is requested to show the visual analogue chart to primi mother with labor pain and inform her to kindly specify her level of pain referring the colour : ranging from 0-10.Dark red colour is severe pain and yellow colour represents no pain; then mark that score in observation.



Cervical dilatation before the intervention: ……

Cervical dilatation after the intervention: ……..

Messaging Time	Pre test					Post Test
Observation / Time	O_1	X_1	X_1	X_1	X_1	O_2
Pain	--	--	--	--	--	--
FHR	--	--	--	--	--	--

APPENDIX - X

കടിഞ്ഞൂൽ പ്രസവത്തിനു വരുന്ന അമ്മമാരുടെ പ്രസവവേദനയെപ്പറ്റിയുള്ള അഭിമുഖവും നിരീക്ഷണവും

ക്രമനമ്പർ: .....

ഭാഗം I അടിസ്ഥാനവിവരങ്ങൾ

നിർദേശം: ഈ ഭാഗത്തിൽ കടിഞ്ഞൂൽ പ്രസവത്തിന് വരുന്ന അമ്മമാരുടെ വിവരങ്ങൾ രേഖരിക്കുന്നു. ചോദ്യകർത്താവ് ചോദ്യം സാവകാശം ഉത്തരം കിട്ടാവുന്ന വിധത്തിൽ ഒന്നിനു പിറകെ ഒന്നായി ചോദിക്കണം. അമ്മയിൽ നിന്ന് ലഭിച്ച ഏറ്റവും മികച്ച ഉത്തരം അതിനനുയോജ്യമായ സ്ഥലത്ത് രേഖപ്പെടുത്തണം.

1. വയസ്സ്

   - 16 മുതൽ 20 വരെ
   - 21 മുതൽ 25 വരെ
   - 26 മുതൽ 30 വരെ
   - 31 മുതൽ 35 വരെ

2. അമ്മയുടെ ഉയരം

   - 145 സെ.മീ.യിൽ താഴെ
   - 145 സെ.മീ.യും അതിനു മുകളിലും

3. ഗർഭകാലത്ത് വർദ്ധിച്ച തൂക്കം

   - 10 കി.ഗ്രാം ൽ താഴെ
   - 10 കി.ഗ്രാമും അതിനു മുകളിലും

4. മതം

   - ഹിന്ദു
   - ക്രിസ്ത്യൻ
   - മുസ്ലിം
   - മറ്റുള്ളവർ

5. നിങ്ങളുടെ കായികാദ്ധ്വാനം നിങ്ങളുടെ ജോലിയിൽ എത്രമാത്രം വരും?

- കഠിനം
- മിതം
- കുറഞ്ഞ അദ്ധ്വാനം

6. താമസസമൂഹം

- ഗ്രാമപ്രദേശം
- നഗരപ്രദേശം

7. കുടുംബഘടന

- കൂട്ടുകുടുംബം
- അണുകുടുംബം

8. പ്രസവസമയത്തുള്ള കുടുംബാംഗങ്ങളുടെ സാന്നിധ്യം

- അമ്മ
- ഭർത്താവ്
- മറ്റുള്ളവർ

9. താഴെപറയുന്നവയിൽ ഏതെങ്കിലും നിങ്ങൾ ഗർഭധാരണം മുതൽ ഇന്നുവരെ തുടർച്ചയായി ചെയ്തു പോരുന്നുവോ?

- നടത്തം
- ഗർഭകാലവ്യായാമം
- ദൈനംദിനജോലി
- വീട്ടുജോലികൾ (ശുചീകരണം, പാചകം)
- ഒന്നുമല്ലാത്തത്

10. എപ്പോഴെങ്കിലും പ്രസവവേദനയെക്കുറിച്ച് പഠിച്ചിട്ടുണ്ടോ?

- ഉവ്വ്
- ഇല്ല

11. മുമ്പെപ്പോഴെങ്കിലും ആശുപത്രിയിൽ രോഗം വന്ന് കിടന്നിട്ടുണ്ടോ?

- ഉവ്വ്
- ഇല്ല

12. പൊതുവെ എത്രത്തോളം വേദന സഹിക്കാൻ നിങ്ങൾക്ക് കഴിയും?

- നന്നായി സഹിക്കാൻ കഴിയും
- സഹിക്കാൻ കഴിയും
- സഹിക്കാൻ പറ്റാത്തത്
- ഒട്ടും സഹിക്കാൻ പറ്റാത്തത്

13. പ്രസവത്തിന്റെ ആദ്യഘട്ടത്തിൽ തിരുമ്മൽ കൂടാതെയുള്ള അമ്മയുടെ പ്രവൃത്തി

- നടക്കൽ
- കിടക്കയിലുള്ളവിശ്രമം
- മറ്റ് ഏതെങ്കിലും

APPENDIX - XI

CIRCULAR HIP MASSAGE GUIDE

Circular Hip Massage:

A type of massage technique in which upward and downward circular strokes are giving on either sides of spine in the sacral region during contraction, which helps to minimize the labour pain.

Timing of this procedure:

1. At 4 - 6 c.m. cervical dilatation of the pre-test massage
2. Massage for 15 minutes need to be given
3. Massage is repeated in every 30 minutes.

Preparatory Phase:

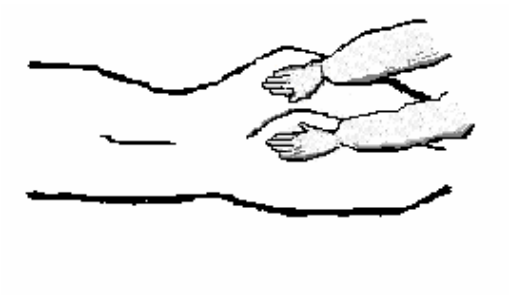
- Check the cervical dilatation between 4-6cm
- Explain the procedure and the effect of labour massage to the mother.
- Give assurance to the mother in such a way that the procedure will not harm the fetus and it will not interfere with the uterine contraction.
- Healthy mother to assume comfortable position (left lying position).
- Expose the treatment area – on either sides of the spine in sacral region.

Procedure

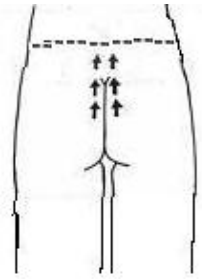
Steps:- The masseur should:

1. Make the mother to lie in the left lateral position with pillow under the head, keeping the left leg straight and right leg slightly flexed at the knee.
2. Rub the palm of the hands gently to warm up.

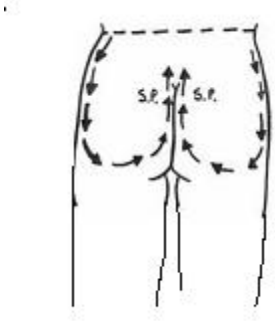
3. Take a comfortable position to do the massage (standing).
4. Place both the hands on either sides of the spine in the sacral region with the hands pointing in an upward direction.



5. During inspiration, the masseur's hands go up to the waist level.



6. During expiration, move hands smoothly down the sides of the hip until they arrive at the starting position (each minute 15 strokes).



7. The massage is done for 15 min with the interval of 30 min. for 4 times.

After massage

- Instruct the mother to lie down in a left lateral position for 30min.
- Wash the hands and record the procedure.

ABSTRACT

A study, to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers at MBMM Hospital, Kerala, is submitted as the partial fulfillment of the requirements for the degree of Master of Science in Nursing. It was done by 30083621 from Annai J.K.K Sampoorani Ammal College of Nursing, under The Tamilnadu Dr. M.G.R. Medical University, Chennai, March - 2010.

The objectives of the study were, to assess the significant difference between the pre and post test mean labour pain score among primigravida mothers in experimental group in relation to circular hip massage, to compare the significant mean difference in labour pain score among primi gravida mothers in the experimental and control group and to determine the association between the mean difference in labour pain score and selected variables among primi gravida mothers in the experimental group.

The Research Hypotheses was: H_1 - There will be a significant difference in the mean labour pain score among primigravida mothers in the experimental group before and after circular hip massage, H_2 - There will be a significant difference in the mean difference in labour pain score among primigravida mothers between the experimental and control group and H_3 - There will be a significant association between mean difference in labor pain score and selected variables among primigravida mothers in the experimental group.

The review of literature was collected under the following headings: studies related to labour pain perception, studies related to massage on pain in general, studies related to labour pain and massage, studies related to labour pain and circular hip massage.

The researcher had developed a conceptual framework based on the Gate control theory. The research approach adopted for the study was quasi experimental, non – equivalent

pre test – posttest control group design. Sample size was 40 primigravida mothers in MBMM Hospital, Kerala. The sampling technique used in this study was purposive sampling technique.

To collect the data an interview schedule used, comprised of selected variables and Visual Analogue Pain Scale used to measure the level of labour pain. It was validated by five experts. Inter – rater method was used to find the reliability of the tool. The reliability of the tool in this study was r = 0.87. the reliability coefficient was found to be high.

Pilot study was conducted among 8 primigravida mothers. The main study was conducted in MBMM Hospital; purposive sampling was used to select samples. To collect the data an interview schedule and Visual Analogue Pain Scale were used as the tool. The data gathered were analyzed by descriptive and inferential statistics using SPSS version 10. The interpretation was made on the basis of objectives of the study.

Findings of the study revealed that there was a significant reduction in the intensity of the labour pain after administering the circular hip massage among the primigravida mothers ($p < 0.05$).

The result showed that there was no significant association in relation to selected variables and labour pain. The conclusion of the study was that, primigravida mothers had a reduction in the labour pain as evidenced by the results shown in Visual Analogue Pain Scale. Hence circular hip massage was found to be a cost effective procedure in reducing labour pain among primigravida mothers.